The RUBBER AGE

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EXECUTIVE COMMITTEE APPROVES POSTPONEMENT OF SPRING DATING

Tire Division Gives Approval to Plan of Board of Directors on Deferring Spring Dating and for Elimination of Odd Sizes As Soon As Possible

At a meeting held at the Lotos Club, in New York on Thursday, July 9, the Executive Committee of the Tire Manufacturer's Division of the Rubber Association, voted to accept the recommendations of the Board of Directors made at the special meeting called in Akron on June 11, to the effect that spring dating should be postponed for a period of about five months, odd sized tires should be reduced in quantity and that all interchangeable balloon tire sizes should be eliminated.

It was felt that the high prices of crude rubber prevailing now presented a serious problem to the industry and that if the demand was lessened for rubber at this time, a rubber shortage might be averted and the market price of crude rubber might be reduced. It is customary beginning at this time of the year for tire manufacturers to begin manufacturing tires for Spring delivery and if this practice was followed this year, the demands from tire manufacturers for immediate or near-by position rubber would further tend to aggravate conditions in producing centers.

The sponsors of this plan of course realize that the needs of the tire dealers for 1926 will have to be met and that tires will have to be manufactured, but by postponing manufacturing until later in the year or until the early part of 1926, the prices of rubber will have come down and at the same time greater amounts of rubber will have been released under the terms of the Restriction Act.

With an increase of the exportable allowance on August 1 to 75% and on November 1 to 85% it is expected that the dwindling stocks in London will have been appreciably replenished by the end of this year. In some quarters hope is even expressed that instead of an additional 10% release on August 1, double that amount, 20%, may be released by the committee in charge of the operation of the Stevenson Plan.

In conjunction with the above plan, a committee was appointed to look into the matter of the reduction of the number of types and sizes of tires, the abandonment of all interchangeable balloon tire sizes and the elimination of second quality lines of tires.

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Rubber Stocks Strong

The stock market for rubber is reflecting the strong position of the leading rubber companies, with new high levels being recorded in a number of instances. Following are the quotations of the rubber stocks listed on the New York Stock Exchange at the end of business on July 14:

	1925 High	1925 Low	July 14 Closing
Ajax, com	15⅞	10	14¾
Fisk, com	21¾	10½	21
Fisk, 1s. pfd (4)	105⅛	75½	105
Goodrich, com	58¼	36¾	58
Goodyear pfd (7)	105¾	86⅛	103⅞
Goodyear, pr pfd (8)	107⅛	103	104⅝
Kelly Springfield, com	21⅝	12¼	20⅜
Keystone, com	3¼	1⅞	2½
Lee Rubber, com	18	11⅝	17
U. S. Rubber, com	60¼	33½	60¼
U. S. Rubber, 1st pf (8)	108½	92¾	108

Litchfield Honored at Banquet

P. W. Litchfield, vice president and factory manager of the Goodyear Tire & Rubber Company, was honored Wednesday evening, July 15, at a banquet which celebrated his completion of 25 years of service and the building of Goodyear's 75,000,000th tire—a large 44 x 10 truck tire.

Litchfield was presented with a diamond service pin by President George M. Stadelman, who has been 20 years with the company. C. C. Slusser, toastmaster, recalled that when Litchfield joined Goodyear only carriage and bicycle tires were made. It was under his direction that the first automobile tire was constructed.

Erie Increases Production

Production at the plant of the Erie Rubber Corporation at Sandusky, Ohio, is now at the highest peak it has ever reached since the company was started, according to a statement made by H. R. Greenlee, treasurer of the company.

Six hundred tires are now being turned out daily, which is an increase of 400 over the daily output of four years ago. And this high production has been realized without the addition of any new machinery to that in use in 1921, according to Mr. Greenlee.

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RADIO TALK ON THE RUBBER SITUATION MADE BY MANAGER OF THE RUBBER AGE

The Operation of the Stevenson Plan Was Outlined and the Reasons for the Present High Prices Given—Numerous Letters Received from Listeners

On the evening of Wednesday, July 8, at 9.30 P. M., Peter P. Pinto, Business Manager of THE RUBBER AGE, gave a talk on rubber over the Radio Corporation Broadcasting Station, WJZ, in New York.

The talk, made at the suggestion of Charles B. Popenoe, manager of the station, covered briefly the whole subject of rubber gathering, production of wild and cultivated varieties, the origin of the name rubber, the many uses to which this material was put, the Stevenson Restriction Scheme, etc. Naturally, these points were only touched upon lightly so that more stress might be made on those phases of the present rubber situation which would be of the most interest to the radio audience.

Inasmuch as it was not possible to make announcement of this proposed talk in our last issue, for a definite date had not been set at the time of going to press, we are here presenting that portion of Mr. Pinto's talk which touched on the Stevenson Act and the events leading up to its enactment:

"Rubber was first gathered commercially in the wilds of the Amazon Basin in South America, early in the 19th Century. Later, more trees were located in Central America and Africa so that the total production amounted to about 54,000 tons of the wild variety by 1900. The English, however, had obtained some seeds from the South American trees in 1876 and started rubber plantations in Ceylon and later in the Malay States, India, Sumatra, Java and Borneo, in the Far East. By 1900 these plantations reported the insignificant production of 4 tons compared with the production of 54,000 tons of wild rubber. By leaps and bounds, however, the plantations increased their production while shipments from other sources gradually decreased, with the result that last year only about 30,000 tons of wild rubber came from the original areas, while almost 400,000 tons came from the cultivated plantations in the Far East, (about 55 per cent of which are owned by British planters, and 15 per cent by the Dutch.)

"During this period prices of rubber had varied from 5 cents in 1836 to $3.10 a pound in 1910. At the end of the World War, however, prices came down, and during 1922 crude rubber averaged about 15 cents per pound. At this price British planters claimed they could no longer operate at a profit. Then the British Government, in November 1922, in order that the plantations might continue in operation, to prevent a shortage of rubber and to allow the owners a suitable profit on their investment, adopted the Stevenson Restriction Plan, a scheme which allowed each plantation to export only 60 per cent of its production based on the actual output for the year ending October 1920. As the market price increased or decreased over a three-month period, the allowable percentage exported was likewise increased or decreased. In other words, if the price went down below a set standard, less rubber would be exported, so as to again bring the price up.

"By this means the amount of rubber on the market became limited, and the price rose from 15 to 37 cents in about 4 months. About this time, however, due to the uncertainty created by the Restriction Plan, and the fact that the rubber industry quieted down somewhat, manufacturers, both American and foreign, bought only for their immediate needs in small quantities. The rubber industry had learned its lesson in the slump of 1920 when many of the leading manufacturers actually had to charge off millions of dollars in high price rubber and other expensive raw materials. During this period, many smaller companies failed and several of the more prominent ones went through trying financial difficulties. It was, therefore, due to this natural lack of demand for rubber which brought the price down to about 18 cents per pound during May and June of last year.

"What then has caused the increase from that low price of 18 cents a year ago to the present level of about 90 cents?

"The answer is first: the shortage created by the Restriction scheme and secondly, the greater world demand for rubber.

"Let us take up first the increased demand.

"As for the reason, we don't have to look very far. Undoubtedly you have witnessed the introduction of balloon tires. On almost every other car these shoes of added comfort are seen—and the demands of automobile owners for these tires have kept every tire manufacturer working overtime for the last year to keep up with the persistent calls for more tires from dealers. This has meant more rubber for balloons take ⅓ additional rubber over other tires. In addition production of automobiles has increased monthly and more rubber is need for *this industry*. And then consider the natural increase in the development of the rubber industry—larger amounts of rubber are needed every day for all kinds of goods such as boots and shoes, rubber flooring, paving, etc. So much for the increased demand.

"Now let us find out how the shortage has been brought about. Under the terms of the Stevenson Act, releases of 5 or 10 per cent above the original 60 per cent are permitted under certain conditions as already outlined. The percentage for the present 3 month period is 65, and on Aug. 1 it will be 75, and on Nov. 1, 85, provided however, that prices remain high enough to warrant these additional releases.

"But, even if the British were to modify the terms of the Stevenson Act to meet the present situation, or if the act were to be repealed, it is unlikely that the present shortage would be relieved to any extent. You must remember that during the period of low prices and little demand, rubber growers could not plant additional trees with any expectation of profit, and thus today when we want more rubber it is not available.

"Can we, therefore, expect lower rubber prices very soon? The answer, according to leading experts, is No, at least, not for a number of months. Present prices are high even under Restriction, and though they are expected to go still higher, they will come down again to reasonable levels as soon as the momentary shortage of rubber in Europe and the United States is over.

"Whether or not any changes in the Stevenson Plan will be made, rests largely on the success of the negotiations now being conducted between the Rubber Association of America and the English which instigated the plan.

"In the meantime, however, American consumers of rubber are assured of earnest efforts in their behalf on the part of the United States Department of Commerce which has just completed extensive investigations of the possibilities of growing rubber under American control in various parts of the world. As soon as these reports are issued we may expect definite action on the part of our government and the American rubber industry looking to the relief of our rubber manufacturers—a relief which will be very welcome to you as the ultimate consumer of the billion dollars worth of rubber goods used in this country every year."

RUBBER EXPOSITION IN PARIS IN 1927

The 1927 International Rubber Exhibition will be held in the Grand Palais in Paris according to an announcement recently made by H. Greville Montgomery in London. The accommodations of the Grand Palais are said to be excellent for exposition purposes. Sir Wyndham Dunstan, who presided over the Brussels Exposition, will act in a similar capacity in Paris.

ANOTHER TIRE PRICE INCREASE LATE THIS MONTH EXPECTED BY THE INDUSTRY

Increase of Crude Rubber to New High Levels Causes Prediction that Another Advance in Tire Prices May Be Expected Late in July—Buying Fever Should Be Halted

Despite the fact that the tire price increase which went into effect on July 1 is only several weeks old, there is already talk of another increase as a result of the soaring prices of crude rubber. At the time the last increase was put into effect, it was felt that no further price changes would be needed for a few months, if at all, but with rubber hitting the $1.12 level the industry can see no way out of their difficulties except by making another increase.

The advance of July 1 was the third this year and practically all tire manufacturers have issued new lists at this time. The amount of the increases varied from 5% to 33⅓% but in the majority of cases the rise in pneumatic and solid tires was 10% and inner tubes, 15%. Even with these increases in effect, tire manufactures absorbed a part of the extra cost of crude rubber prevailing at the beginning of the month. It is not possible, however, to continue to absorb such higher costs of raw materials and it is expected that the coming increase will be sufficient to take care of the greater costs of manufacturing under present conditions.

Warned Against Excessive Buying

Following the policy adopted at the time of the slump in the tire industry in 1920, the General Tire &, Rubber Co., again sent out a notice to all its dealers recently, warning them against overstocking with high priced tires. Buying tires at this time in excess of immediate requirements will cause the manufacturers to use high priced crude rubber and the dealer will have a stock of high priced tires on his hand which may "automatically raise prices on themselves and the public." Both in 1920 and in 1922 General warned its dealers to prevent overstocking and both times the company proved itself correct.

In making its announcement of the July 1 increase, the Goodyear Tire & Rubber Co., issued the following statement on the comparative prices of tires for the past 13 years:

"While crude rubber prices have increased 300 per cent since June 1 last year, tire prices are still only 20 per cent above the lowest price level in the history of the industry.

"The price increases made by tire manufacturers this year, on account of the increased rubber costs, merely brought prices back to where they were in June last year.

"This is brought about by the fact that the tire manufacturer is passing on to the public the benefit of lower-priced rubber purchased in previous months.

"An automobile tire is one of the few articles in general use today which can be bought at less than pre-war prices. Most people do not realize how extensively tire prices have come down in the last 12 years thus lowering the cost of operating an automobile and making it possible for millions of additional people to drive a car.

The following table shows the average consumer price of Goodyear All-Weather Tread fabric tire in the 30 x 3½ or Ford size, in the last 13 years.

1913	$24.93	1919	$22.13
1914	19.32	1920	26.00
1915	15.73	1921	18.07
1916	17.33	1922	12.87
1917	21.53	1923	13.53
1918	26.00	1924	12.33
		1925	11.67

"In the 30 x 3½ size the price is actually lower than it was in June, 1924, and less than half what it was 12 years ago.

"Along with this has gone the tremendous increase in mileage which tires give now-a-days as compared to 12 years ago. It is safe to say that mileage has trebled in that time."

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BRITISH STAND PAT ON RESTRICTION DESPITE NEW HIGH LEVEL FOR RUBBER

Rubber Reaches Highest Point in Thirteen Years—London and Amsterdam Markets Very Active—Possibilities of Removal of Restriction Remote

NEW YORK, July 17, 1925—While the ticker was recording a new high level for crude rubber this morning, reports from London repeat the emphatic statements that the House of Commons will not interefere with the Stevenson scheme, even in face of a shortage of rubber.

Spot rubber was quoted at $1.16 here today, which is the highest point reached since 4s. 10d. was quoted in London back in the beginning of 1912. The continued high rise in crude has already given rise to protective measures on the part of American rubber manufactures as is evidenced by the recent action of the Executive Committee of the Tire Manufacturer's Division of the Rubber Association of America and it is predicted that many of the smaller tire manufacturers will have to shut down soon unless it is possible to obtain rubber at lower prices.

Coincident with the higher rubber prices, there has been reported a very active market for shares of rubber plantation companies in both London and Amsterdam. The Dutch stock market has been featured with sharp rises in rubber shares during the past week owing to the fact that many plantations which had sold a large part of their production in previous years at comparatively low prices are becoming rid of these contracts and will be open to better terms in the near future.

The scenes reported in the rubber share market in London have been described as 'frenzied' as new high prices were posted and the movement of the floor of the Stock Exchange has been likened to a football field.

As regards the possibility of the removal of restriction, W. G. A. Ormsby-Gore, Under Secretary of the Colonies, stated several days ago in the House of Commons that the British Government does not intend to relax its restriction on rubber exports but that if prices remained at their present level, "the question would be re-examined." In the meantime there is considerable agitation in Ceylon for the removal of restriction. Not only has the Penang Chinese Chamber of Commerce passed resolutions urging the removal but more recently the Low Country Products Association of Ceylon has passed a similar resolution.

In the meantime H. S. Firestone is continuing his campaign embodied in the slogan, "Americans Should Produce Their Own Rubber." In the last issue of the Firestone *Non-Skid*, the whole subject of restriction is reviewed. The article states in part: "The pinch is upon us. The restriction legislation is working just as the English planned that it should work. Rubber prices have soared and soared and in the last week (first week in July) went to the 90 cent mark, while just before the restriction act became effective the price was 15 cents."

RUBBER MANUFACTURERS CONFER WITH KELLOGG

A committee representing the Rubber Association of America held a lengthy conference with Secretary of State Kellogg in Washington on July 17 and discussed various aspects of the present crude rubber situation. A memorandum containing a resume of all facts in the possession of the Association bearing on restriction, prices, supply, etc. of crude rubber was the basis of the conference but was not released for publication. Following the meeting with Sec. Kellogg, the committee had a conference with the British Commercial Attache. The committee was as follows: Chairman, F. C. Hood, pres., Hood Rubber Co.; E. B. Germain, pres. Dunlop Tire & Rubber Corp.; F. A. Seiberling, pres. Seiberling Rubber Co.; P. W. Litchfield, vice-pres. Goodyear Tire & Rubber Co., and A. L. Viles, general manager and secretary of the Rubber Association. J. C. Weston, pres. Ajax Rubber Co., was a member of the committee but was unable to attend.

S.M.E. Elections

At the recent meeting of the Akron section of the Society of Mechanical Engineers the following officers were elected:

J. E. Trainer, master mechanic for the Babcock & Wilcox Co., was elected chairman; H. K. Jennings, power engineer, Firestone Tire & Rubber Co., vice chairman; W. R. Gillam, chief engineer, Lambert Tire & Rubber Co., secretary-treasurer.

DECLINE IN CANADIAN RUBBER GOODS EXPORTS

Canada exported $1,184,675 worth of rubber products during April as compared with $1,330,084 in March—representing a normal decline from the peak seasonal shipments usually occurring in the third month of the year. The tire trade held up well, exports of casings, inner tubes, and solid tires being valued at $914,616 in April as compared with $896,617 in March. The decline in total value of exports was due to diminished shipments of other classes of rubber products, especially footwear and belting. There were only 29,337 pairs of rubber boots and shoes and 204,263 pairs of canvas rubber-soled shoes exported in April, as compared with 64,643 pairs of rubber boots and shoes and 289,348 pairs of canvas rubber soled shoes in March; while belting exports fell off from 142,881 pounds in March to 79,293 pounds in April.

The principal tire markets during the month were United Kingdom, 15,835 casings; Argentine, 10,335; New Zealand, 9,033; British South Africa, 7,657; Australia, 6,240; and the Dutch East Indies, 3,882, no other market taking over 2,500.

India Showing Satisfactory

For the first five months of the year the India Tire & Rubber Co. report increased business of more than 70 per cent, compared with the corresponding period last year. Approximately 1,500 tires, most of them large size truck and bus casings, are being manufactured daily. Earnings are reported to be better than $40 a share on the common stock.

Auto Output Continues Large

Automobile output continues at an unusually high level for this season of the year, trade estimates report. Preliminary figures place the output for June at 396,000 cars and trucks against 404,300 in May and 421,878 in April, the record month. June output this year was nearly 150,000 units greater than in June, 1924, when the total was 249,868.

Archer Plant Busy

The Archer Rubber Co., Milford, Mass., manufacturers of raincoats, rubberized cloth, aprons, tubing, etc., report continued activity with excellent prospects for the balance of the year. At present over 200 workers are employed. The new building and equipment added early this year have aided production materially. Officers are: J. T. Callahan, president; F. T. Harvey, vice president; F. P. Lee, secretary.

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TIRE MANUFACTURERS CONTINUE TO OPERATE THREE SHIFTS THIS MONTH

Indications Point to No Curtailment at Present—Demand for Balloon Tires Continues Unabated—Dealers Not Being Loaded Up—Committee Action May Clarify Situation

Instead of the usual let-up in production during July and August every indication in the tire industry points to continued maximum production schedules for some time to come. Favorable weather has reduced stocks in dealers hands and talk of still higher prices has served to cause many buyers to fill their needs now instead of waiting until later in the season. As a result practically all the Akron, Trenton and New England tire factories are continuing to operate three shifts and officials deny that any curtailment is being contemplated at present.

They are, however, preparing to make further advances in tire prices. This will be the fourth increase in tire prices since crude rubber prices began to soar early this spring.

The large manufacturers in Akron report that the demand for balloon tires is still strong enough to permit them to maintain the present rates of production. Several companies state that they are behind in filling orders. No attempts are being made to "load up" dealers.

The only halt in production in Akron was temporary. All factories closed at noon Monday, July 20, in order to allow their employees to enjoy the festivities planned for the opening day of Centennial Week. Rubber played a prominent part in the floats entered in the mammoth parade and in the industrial exposition conducted during the week.

It is said that Goodrich daily production is about 25,000 tires and 30,000 tubes; Goodyear, 30,000 tires and 35,000 tubes; Firestone, 33,000 tires, 35,000 tubes; Miller, 12,000 tires and 15,000 tubes. Dayton Tire & Rubber Co. sales are running far ahead of 1924, June sales having exceeded last year by 50%. Ajax and other Trenton factories are also reporting excellent conditions.

It is too soon to predict what effect the action of the Executive Committee of the Tire Manufacturer's Division of the Rubber Association in approving of the Board's suggestions on interchangeable balloon sizes, odd sizes and postponement of spring dating, will have on the general tire situation, but there is no doubt that relief will be felt within a comparatively short time. If tire prices continue to advance every month, users will soon begin to wonder if it would not be better to defer purchases until the situation clears itself.

New R & H Bulletins

Four new bulletins on the action of different accelerators in reclaim stocks have just been sent out to the industry by the Roessler & Hasslacher Chemical Co. The four accelerators are diphenylguanidine, hexamethylene tetramine, ethylidine aniline and triphenylguanidine. In addition to describing the use of these materials, the results of typical compounds are given in chart form on the reverse side of each sheet.

Rubwood Orders Rubber Equipment

Orders for rubber machinery have been placed by the Rubwood Wheel, Inc., of Monsoon, Mass., for the new building which is being erected at this time to take care of the increasing demands for steering wheels.

Rubbercraft Closing

It is reported that the recent closing of the Rubbercraft Corp., of Doylestown, Pa., may be permanent and that the 25 employees will be thrown out of employment. Rubber balls, toys and molded goods were manufactured. W. J. McLaughlin is president and W. G. Harlow, secretary and treasurer.

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SURVEY FOR NEW CHEMICAL EXPOSITION NOW PLANNED

The Board of Directors of the Association of Chemical Equipment Manufacturers, following the successful first Chemical Equipment Exposition in Providence, June 22nd to 27th, has instructed that through its proper officers an immediate survey of exposition building, exposition city, available date, etc., etc., as applicable to a second Chemical Equipment Exposition under the management of the Association.

Upon the basis of this data a determination of future Equipment Show activity is to be made within a short time.

The survey is to be based upon the various physical, geographical and time considerations that have been found essential to the organization and conduct of a strictly industrial-and-technical-attendance exposition drawing its interested visitors from all of the producing industries in which chemical processes are involved in any stage.

Firestone Dividends

The Firestone Tire & Rubber Co., Akron, Ohio, recently declared the following dividends on common and preferred stock:

A dividend of one and one-half dollars ($1.50) per share on the common stock payable July 20, 1925, to stockholders of record at the close of business July 10, 1925.

The regular quarterly dividend of one and one-half per cent (1½%) on the 6% Preferred Stock payable July 15, 1925, to stockholders of record at the close of business July 1, 1925.

The regular quarterly dividend of one and three-quarters per cent (1¾%) on the 7% Preferred Stock payable Aug. 15, 1925, to stockholders of record at the close of business Aug. 1, 1925.

Salem and Niles Combine

The equipment of the Niles Tube Co., owned and operated by the Salem Rubber Co., has been moved to Salem, Ohio, after officials of the company had decided upon a consolidation of the two plants.

It was stated that the company was erecting a new building adjacent to its present plant on Elm St. at a cost of between $15,000 and $18,000. The addition is already under construction and the company expects to begin the manufacturing of tubes shortly.

It is stated that the building would cover approximately 2000 sq. ft. Between 18 and 20 additional men will be employed.

Ra-Claire Rubber Uncertain

The Ra-Claire Rubber Co., which is attempting to raise funds to open a rubber factory in Newark, Ohio, is exerting every effort to raise a loan and to that end is sending out additional solicitors. It is expected that within a few days enough capital will have been pledged.

U. S. RUBBER INCOME FOR FIRST SIX MONTHS

According to *Boston News Bureau* and *Wall Street Journal* statements, preliminary estimates on U. S. Rubber Co. for the first six months of 1925 will show net sales in excess of $89,000,000, an increase of $10,000,000 over the corresponding period of last year. From reliable sources it has been learned that these figures are accurate but no official release has as yet been made.

From these figures it appears that net profits will be close to $6,000,000, or $4 a share on the 810,000 shares of common stock, after preferred dividend requirements. The net profits for the first six months of 1924 were $4,422,487 or $2.04 a share on the common stock.

Tire, footwear and mechanical sales are very satisfactory and every indication points to an equal profit for the second half of this year.

Union Takes Over Mt. Vernon

Announcement has been made of the purchase of the Mt. Vernon tire plant in Mt. Vernon, Ohio, by the Union Tire and Rubber Co., for a consideration said to be $250,000. Joseph B. Sheppler of Coshocton, reported to be the son-in-law of William Green, president of the American Federation of Labor, is president of the concern and Louis Hinsch is secretary-treasurer.

Mr. Sheppler announced that the plant is expected to produce 5,000 tires daily and to employ about 1,000 men.

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EXPORT DUTY PROPOSED ON NATIVE DUTCH RUBBER

The Director of Finance of the Netherlands East Indies has submitted a proposal to the Government that a duty be imposed on native rubber exported from the outer possessions (Bali and Lombok excepted), effective from June 1, 1925. It is proposed that this duty should be 5 per cent ad valorem, based upon three grades: namely, dry rubber (crêpe, sheet, and blanket), with a value of 100 florins per picul, wet rubber (slabs), valued at 75 florins per picul, except when produced in the Province of Djambi, where the value will be 60 florins per picul, and inferior rubber (scraps, bark, earth scraps, etc.), with a value of 50 florins per picul. Rubber obtained from trees grown on a rubber plantation will be free of export duty provided that a certificate of such production is issued by a government official. The term "native rubber" is to be applied to "Hevea rubber" not obtained from tapable trees grown on a plantation owned by a company regularly devoted to the cultivation of rubber, whether under native or European control. Native rubber purchased and treated by a regular plantation company is also to be subject to duty.

N. J. Zinc Stock in Trenton

The New Jersey Zinc Sales Co. is now carrying stocks of Zinc Oxide and Albalith in Trenton, N. J., at the Anchor Warehouse, New York and Olden Avenues. In a previous issue of THE RUBBER AGE this item was published with a misleading caption and it is therefore repeated for the information of our readers.

Exports of Scrap Rubber

Following are the exports of scrap and old rubber from the United States during May, 1925, as recently announced by the Department of Commerce:

CUSTOMS DISTRICTS	*Pounds*	*Dollars*
Vermont	116	11
Massachusetts	154,453	5,552
St. Lawrence	72,540	2,422
Buffalo	61 257	1.543
New York	1,906,053	93,162
Philadelphia	133,143	4,087
El Paso	250	20
Los Angeles	55,072	1,336
San Francisco	530,762	13,731
Oregon	68,334	1,056
Washington	37,655	1 120
Michigan	81,700	743
TOTAL	3,051,335	127,792

A Correction on AZO

In our issue of June 25 we published a news item to the effect that the N. J. Zinc Co. was carrying stocks in Trenton and by mistake headed the item, "AZO Stocks in Trenton." To correct any wrong impression which may have been conveyed by this item, we desire to state that AZO zinc oxides are manufactured and sold exclusively by the American Zinc Sales Co., of Columbus, Ohio, and that stocks of these materials have been carried in Trenton for a number of years.

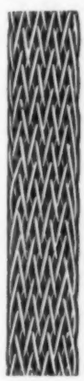
DUNLOP PAYS TRIBUTE TO FOUNDER OF TIRES

The Dunlop Tire & Rubber Co., Buffalo, N. Y., will celebrate the 37th anniversary of the first patent for a pneumatic tire granted to John Boyd Dunlop on July 23, 1888 by making announcements in the newspapers of the country during the week of July 19-24. Special efforts are being made to interest all Dunlop dealers in this event and special electros are being supplied for local use.

The Dunlop Merchant News has the following to say in regard to the development of clincher and balloon tires: "The first clincher and first straight side tires were pioneered by Dunlop in 1890. And then the balloon tire in 1916. Experts have recently declared that John Boyd Dunlop's first pneumatic, however, contained the balloon tire principle of more air at lower pressure, to a greater degree than the biggest balloon tires of today."

New U. S. Warehouse

A complete line of pneumatic tires will be carried by the U. S. Tire Co. in Greenville, S. C., as soon as arrangements are completed. It is said that the warehouse will be under the supervision of Davidson Bros. who operate the Keystone Tire Sales Co., managed by R. R. Bishop. The stock carried here will be capable of supplying the immediate needs of the various dealers in the Piedmont section of South Carolina.



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Entire freedom from bead trouble in the construction of straight side tires is assured by the use of either National "(Patent)" High Tensile Strength, Flat Woven, Bead Braid or our new (Pratt Patent) Bead Cables. These cables, made to dimensions specified, have seven strands, yet only one piece of wire is used without soldered, welded or brazed joint.

Write for working samples of either National flat braid or Pratt cables (no charge to tire manufacturers) and full information as to our products and service.

Our engineering department tests beads and furnishes complete confidential reports as to their stretch, set and bursting point, without charge. Inquiries solicited regarding this special service.

National Standard Company
Niles, Michigan

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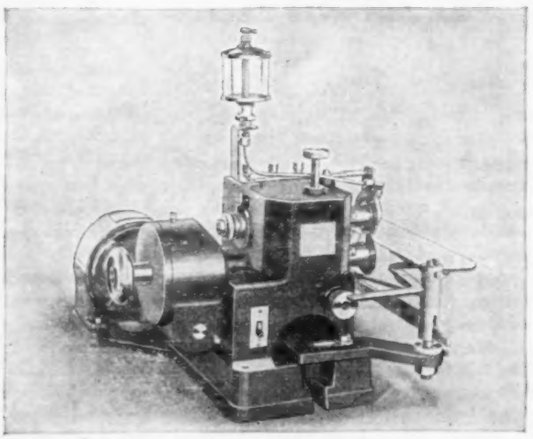

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HOOVER DENIES COMMENT ON PAYING WAR DEBT

Secretary Hoover through his assistant, William E. Yelerton, has denied ever saying in any statement issued to the press that Great Britain is making the United States pay its war debt to this country by increased taxes on rubber. Mr. Yelerton took issue with the Knoxville (Tenn.) Sentinel on a statement which had the above inference and stated in reply that "the subject of rubber and of the British war debt were in no way linked by the Department of Commerce or by Secretary Hoover."

This official statement should help to enlighten the many newspapers in this country who have consistently linked the high prices of rubber with the payment of Great Britain's war debt to the United States.

NEW AUSTRALIAN RUBBER COMPANY BEING FORMED

The Dunlop Rubber Co. of Australia (Ltd.), which is entirely separate from Dunlop Rubber Co. of England, announced recently the formation of a company to be known as the Dunlop-North British Shoe Co. (Ltd.), for the manufacture of rubber tennis shoes, sand shoes, and goloshes. The North British Rubber Co. (Ltd.), Edinburgh, Scotland, has joined with the Dunlop Rubber Co. of Australia (Ltd.) in this enterprise, their mutual interests ending, however, with the lines mentioned. The North British Rubber Co. of Australia Proprietary (Ltd.), a subsidiary of the parent organization, formed in Australia to market North British products, will continue to market the lines except rubber footwear. The most important of those lines are automobile and cycle tires, parafloor floor covering, hose, vulcanite combs, hot water bottle, golf balls, diving gear, waterproof sheeting, india rubber belting, and balata belting.

To Start Early Next Year

The new company, in which the Dunlop Rubber Co. is said to have a controlling interest, will be capitalized at £500,000, and will employ about 500 operatives, it is said. The plant will be situated next to that of the Dunlop Rubber Co. at Abbotsford, Melbourne. It is planned to complete building and installation of equipment as rapidly as possible, in order that production can be commenced early in 1926. The goods will bear the trade-mark now used by the North British Rubber Co., and that company will continue to ship rubber soled shoes to Australia until the local plant is able to supply the demand.

Australian Imports

British, Canadian, and American manufacturers—besides several local manufacturers—have supplied Australian requirements in tennis shoes, sand shoes, and goloshes, in the past. In the fiscal year ended June 30, 1923, the Commonwealth imported "goloshes, rubber sand boots and shoes, and plimsolls" to the value of £94,688, of which £52,455 were from Canada, £31,933 from the United Kingdom, and £10,221 from the United States. In the following year, the total increased to £120,264, divided as follows: Canada £63,398; United Kingdom, £47,003; United States, £9,850. Canadian supplies consisted largely of tennis and sand shoes, while the North British Rubber Co. is said to have had very little competition in the sale of goloshes. In the fiscal years above mentioned, the State of New South Wales imported 64 per cent, and 59 per cent, respectively, of the total value of Commonwealth imports of "goloshes, rubber sand shoes and boots, and plimsolls."

Henderson Appoinments

R. B. Tracy, eastern sales manager for the Henderson Tire & Rubber Company, Columbus, Ohio, has announced the following appointments: Albert Braunwarth salesman for New York City, formerly of the Federal Tire & Rubber Co.; J. A. Lawrence, formerly of the Miller Rubber Company, for New Jersey; H. A. Langmaid, formerly with the Brunswick Balke-Collender Company for Maine, Vermont and New Hampshire; S. Pollner, formerly of the Spartan Tire & Rubber Company, for greater New York; and M. M. Pollner, of the Victor Tire & Rubber Company, for New York State.

George F. O'Brien, formerly assistant advertising manager of Michelin Tire Company has lately joined the Henderson Tire & Rubber Co.

New Incorporations

The Hicks Rubber Company of Tyler, Inc., of Tyler, Texas, has been incorporated with a capital stock of $10,000., by D. T. Hicks, E. A. Hicks and D. N. Hicks.

* * *

The Beverly Manufacturing Co., of Boston, incorporated by Max Brown, Boston, Frederick J. Gleason, Cambridge, and George F. Kerr, Newton, will manufacture rubber heels.

* * *

Incorporated with a capital stock of $10,000., Old Hickory Rubber & Belting Company of Indpendence, Mo., enters the market to manufacture and sell all kinds of rubber goods and products. Ralph E. May, George R. Peterson, William May and L. B. Schowengerdt are the incorporators.

* * *

The Beverly Rubber Company, Boston, has been incorporated, with a capital of 1,000 shares, common stock, of no par value. The incorporators are William M. Floring, of Brighton, Mass., Lincoln S. Monaghan, East Braintree, Mass., and George Perley Nicoll, Foxboro, Mass. The company will manufacture rubber heels.

A certification of preliminary dissolution has been filed by the Majestic Rubber Company, of Indianapolis.

Reclaiming Plant in Maryland?

The Chamber of Commerce of Hyattsville, Md., has appointed a committee of three members to investigate the report that a rubber reclaiming plant is to be located there.

Patent Punching Machine

Herman O. Stubbs, inventor of a rubber punching machine recently granted U. S. Patent No. 1,542,422, has assigned the patent to the Firestone Tire & Rubber Co., Akron. The machine comprises a support for a moving strip of material, a die for cutting blanks from the strip, an ejector adapted to remove the blanks from the strip, and means for supporting the strip while the blanks are being removed adapted for forming a discharge opening for the blanks and for varying the size of the opening.

Rubber Machine Patented

William C. Hoover and Ambrose Dwyer, inventors of a method and apparatus for grinding hard rubber recently granted U. S. Patent No. 1,542,346, have assigned the patent to the B. F. Goodrich Co., Akron. The method comprises submitting the hard rubber to a crushing action in an inert fluid medium at an elevated temperature so as to facilitate grinding. The ground particles are then separated from the fluid medium.

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The MODERN and SATISFACTORY method for PACKING and SHIPPING.

Shipments can be made in units up to 90 lbs.

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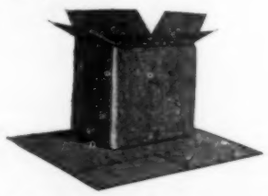

Brooklyn Fibre Syndicate, Inc.
Decatur St. & Irving Ave., B'klyn, N. Y.
Foxcroft 3800

Perfect Balloon Boot

The Rubber Products Co., Fort Worth, Tex., have perfected what they claim to be the best and most correctly designed boot on the market for the repair of balloon tires. It is the result of much research with balloon tires and their repair. While especially designed for the repair of balloons, this boot is said to be equally as satisfactory for use in high pressure tires. The prime necessity in repairing a balloon tire is to make a repair with maximum strength and flexibility with minimum weight and stiffness and to so shape the repair as to distribute shocks and thus prevent pounding at the end of the repair. With the Balloon Boot such a repair can be easily made, the company claims. The boot is already shaped-to-fit, three-ply cord construction, triangular in shape. It is claimed that the boot will repair any injury as effectively as a square or rectanguar boot, and, on account of its shape, the tendency of the repair to pound from road contact is eliminated as the shocks strike transversely and are distributed at an angle of 45 degrees across the tire.

"Uniflex" Registered

The Uniflex Rubber Co., Rutherford, N. J., recently registered in the U. S. Patent Office the trade-mark "Uniflex" under Ser. No. 213,052. The trade-mark will be used on rubber force cups, rubber basin stoppers and sink stoppers.

INFORMATION EXCHANGE

The inquiries listed below have already been answered but additional information from our readers will be welcome. Mention the reference number in correspondence.

Red Fibre Sheets

(Reference No. 157) Will you please give us the names of several manufacturers of red vulcanized fibre sheets ?

* * *

Rubber Flooring

(Reference No. 158) We wish to make a connection with a desirable rubber tile flooring manufacturer for distribution and sale in Southern California and desire a list of such manufacturers.

* * *

Faultless Assigned Patent

The Faultless Rubber Co., Ashland, Ohio, was recently assigned U. S. Patent No. 1,543,506 covering a method of making hollow rubber articles, such as finger cots, nipples, etc., invented by Thomas W. Miller. The method consists in first forming a tube of vulcanizable material, then dividing the tube into lengths and simultaneously shaping the lengths into hollow closed bodies each double the length of the completed article. The bodies are then expanded and vulcanized to a predetermined shape and finally separated into two sections, each section forming a completed article.

Soapstone Firms Merged

Several months of negotiations were concluded recently when papers were signed and approved by counsel covering the taking over by the Armstrong Products Corporation, 42 Broadway, New York, of the Phoenix Soapstone Company, the Maryland Soapstone Company, and the Virginia Chesapeake Soapstone Corporation, and as an added facility the absorbing corporation also acquired a railroad which supplies interconnecting quarry transportation and connects with the Southern Railway.

The Phoenix and Virginia Chesapeake Soapstone companies are located near Arrington, Nelson County, Va., on the main line of the Southern Railway, and the Maryland Soapstone Company is located about twenty-five miles from Baltimore on the main freight line of the Baltimore & Ohio Railroad. All these companies have been and are in operation, and through this absorption the Armstrong Products Corporation expects to enlarge the capacity of each plant in order to meet the demand for soapstone and its products, which is constantly increasing in volume.

The Maryland Soapstone Company will continue to manufacture pulverized soapstone, or talc, for local as well as export purposes. The Phoenix and Virginia Chesapeake plants are to continue in the quarrying of blocks, slabs and sundry items which will in turn be fabricated by them into items ready for its users.

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REVIEW OF RUBBER INDUSTRY IN NEW ENGLAND DISTRICT FOR PAST CENTURY

Writer Gives Facts on Beginning of the Rubber Industry With Introduction of Rubber Shoes in 1824—Boston Now Makes 38 Per Cent of All U. S. Rubber Footwear

Reviewing the industrial development of New England for the past century in the 100th Anniversary Number of the Boston Traveler, on July 6, Henry P. Kendall, Chairman of Committee on Commercial and Industrial Affairs, Boston Chamber of Commerce, presented some interesting facts on the various industries which have helped build up this section of our country.

Among the industries covered in the review, rubber is given a prominent part, and in the belief that such a review will be of interest to our readers, we are presenting Mr. Kendall's account of the beginning and development of this industry:

Rubber was first imported to New England by the Salem sea captains. It is said that Capt. Benjamin Upton brought a pair of native Para rubber shoes to that city about 1824. As the merchants of Salem found the rubber business profitable, they purchased shoe lasts and shipped them to the Amazon. These lasts were successfully coated with a fairly thick layer of rubber, the product being put on the market as the pure gum overshoe. Messrs. Bertram and Kerwin even established a factory at Para for the manufacture of these shoes. This trade was active between 1820 and 1860. For instance, in 1840, 141,341 pairs of shoes were brought in to Salem and 49,698 pounds of rubber. In the period from 1836 to 1856 the Para customs records show that 1,792,098 pairs of shoes were exported to Salem; 1,518,532 to New York; and 575,904 to Boston.

At no period has Boston been an important receiving port for rubber, in spite of the large number of factories which have in later years grown up in this immediate vicinity. From 1791 on, factories were working to discover some means of preventing rubber from stiffening in the cold and from becoming sticky in warm weather. It was only in 1839 that Charles Goodyear, experimenting upon the effect produced by heat upon the compound of rubber and sulphur, accidently brought a portion of the specimen he was working with into contact with a hot stove. This marks the discovery of vulcanization, which made possible the tremendous development which has since taken place in the rubber industry.

Another important invention was that of Edward M. Chaffee, the machine which was the forerunner of the calenders used in every rubber factory today. This machine, built in 1836 at a cost of $10,000, was sold at auction seven years later for $3000, and two years later still was acquired by Goodyear for the purpose of experimenting at a price of $525. It was run successfully for a long time and was in operation in the works of the Boston Belting Company until nearly the end of the last century. These two inventions, vulcanization and Chaffee's machine, made possible the modern rubber industry. This industry very soon divided itself into a multitude of specialties such as boots and shoes, mechanical rubber goods, druggists' and surgical supplies, autmobile tires, waterproof clothing, insulated wire, hard rubber, and reclaimed rubber.

Hub's Rubber Shoes

Providence early became a center of the rubber shoe industry, although in more recent years the supremacy has moved to the immediate vicinity of Boston. One of the early rubber plants which for years had the largest output was the Hayward Rubber Company, established in 1847. Its goods were exhibited in London in 1851. It established foreign agencies in Europe and large numbers of rubber shoes were exported.

The Boston Rubber Shoe Company, today a branch of the United States Rubber Company, was incorporated in 1853. Its first factory was the Malden plant with a daily capacity of 600 pairs of shoes. In 1883 it built another factory at Melrose which is still in operation.

To give a history of the establishment of later plants is to rehearse some of the well known names of New England companies. The Woonsocket Rubber Company, 1864; the Revere Rubber Company, 1863; the Naugatuck Rubber Company, 1844, and many others. The Hartford Rubber Works and the Boston Woven Hose & Rubber Company were among the first producers of rubber tires.

An important specialty in the rubber industry is the reclaiming of rubber. The first patents on processes for reclaiming rubber were granted in 1868 to Hiram L. Hall of the Beverly Rubber Company, who used the product in the manufacture of rubber clothing. The use of reclaimed rubber has become more and more general, and at present it is probable that the consumption of reclaimed rubber approaches the amount of new crude rubber used. The British plan for the restriction of production, which in the past few months has enormously increased the prices for crude rubber, is likely to stimulate the demand for reclaimed rubber.

With the enormous growth of the automobile industry, the manufacture of rubber tires has become centered in Akron. Boston, however, still holds the supremacy for the manufacture of rubber footwear. The Hood Rubber Company, one of the largest independent factories for rubber footwear, has a daily capacity of 75,000 pairs of rubber shoes, 1800 automobile tires, 2500 inner tubes, 100 solid tires for trucks, and is enlarging its facilities. This district alone manufactures nearly 38 per cent of the total rubber boots and shoes produced in the United States.

Hood Stock for Employees

At a meeting held on July 15, the Hood Rubber Co., authorized the issue of $500,000 capital stock of the company to provide for issuance of stock to employees.

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Los Angeles
New Orleans

HENDERSON WORKING ON RUBBER EXCHANGE PLANS

Although additional details of the Rubber Exchange plan recently announced by F. R. Henderson are not available at this writing, it is known that a constitution and by-laws are being drawn up for the consideration of manufacturers, dealers, brokers and others interested.

Opinion on the merits of a Rubber Exchange is divided as shown by inquiries made in the industry by THE RUBBER AGE. Some state that an exchange such as is proposed would enforce protection on contracts which are now a great risk to dealers and importers. Others can see no special benefits. Mr. Henderson believes that it would have a stabilizing influence on the rubber market by furnishing official quotations and by allowing speculation which is healthy for the market on any commodity. "It has been the salvation of the wheat farmer," says Mr. Henderson, "and why should it not equally benefit the rubber grower?"

It will be recalled that about 5 years ago Mr. Henderson started a similar plan but shortly after, he was called to Europe and when he returned the rubber industry had taken such a decided slump that it was thought better to drop the matter. Since the original announcement was made a number of established exchanges in other commodities have shown great interest and have already tendered the facilities of their organization. Whether or not such offers of assistance will be accepted depend largely on the reception which the details of the plan receive from the industry after they are announced.

Wants Rubber Exchange

As announced exclusively in THE RUBBER AGE in our last issue, the Metal and Rubber Club of New York City, which consists of a number of members of the New York Metal Exchange in association with members in a number of other industries including rubber, is still actively interested in the formation of a rubber exchange.

Mr. Lang, the president of the club, in a statement made to a representative of this paper, believes that the facilities and organization of the Metal Exchange can be used to great advantage in the formation and operation of a rubber exchange. Among the members of the club are a number of leading dealers, brokers and importers of rubber and it is felt that with these members as a nucleus and with their cooperation, the rubber exchange can be started successfully. Mr. Lang hopes to secure the help of all interested in his plan and may have a more definite statement to make within the next month.

Fisk June Sales

The Fisk Rubber Company reports sales of tires in June of $7,725,551, compared with $6,999,142 in May, and net profit after Federal taxes in June of $1,355,780, against $861,918 in May.

Edwin Binney, Jr., Graduates

Edwin Binney, Jr., son of Edwin Binney of the Binney & Smith Co., has just completed a course in the Graduate School of Geology at Yale University. He becomes a Doctor of Philosophy with a degree of Ph.D.

Mr. Binney has specialized in geology in order to familiarize himself with the gas and carbon producing end of the business. His work at Yale has been brilliant, particularly his thesis on certain gas fields of Wyoming. In addition to distinguishing himself in his studies, Mr. Binney was a noted swimmer for several years holding the Intercollegiate

Sumatra to Plant Rubber Along Motor Roads

According to latest advices from Sumatra, the Dutch authorities in the northern portion of the island have requested the natives in that area to plant rubber along the routes and roads traversed by automotive traffic.

The Dutch Government has expressed its willingness to give advances for new planting, the sums advanced to be repaid when the trees are ready for tapping. It is stated that if all the vacant lands were put under rubber there would be hundreds of thousands of acres available for planting Para rubber. Certain planters in East Sumatra do not welcome this policy, and are uneasy in regard to the Government's new plan.

This Weeks News

- *this week*

Every rubber executive or engineer—no matter how busy he is—will read news of the industry. That's why he reads every issue of THE RUBBER AGE. He knows that the news found there is news of this week—not of last month or last year.

Firms selling their products to rubber factories can, of course, profit by this great reader interest.

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EXPERT DECLARES U. S. RUBBER CO. PLANTATION IN EXCELLENT CONDITION

Noted Authority on Rubber Planting Inspects H. A. P. M. Plantation in Sumatra and Reports that It Has Kept Abreast of Recent Rubber Growing Research

In a report entitled, "Recent Developments in the Rubber Planting Industry," Herbert Ashplant, Government Rubber Mycologist of Southern India, states that the H. A. P. M. rubber plantations of the General Rubber Co., in Sumatra, "has become the Mecca of all planters who wish to keep abreast of recent rubber research ..... many familiar problems of rubber planting have been satisfactorily settled during the last few years by the scientific staff."

A large section of the report deals with the progress that is being made in the promising efforts to increase the yield of rubber trees by seed selection and by budding.

Speaking of budding, Mr. Ashplant says: "All the scientific workers who have studied the subject at first hand are convinced of its possibilities. The members of the H. A. P. M. staff, who are in charge of the selection work, and who have had more experience of budding than all the rest of the rubber world put together, were, I found, entirely confident of carrying their work through to success."

"A rough estimate of the area of budded rubber at present in existence gives Sumatra 12,000 acres, Java 2,000 and Malaya, 2,500. Of this area, 6,000 acres in Sumatra, and 2,000 acres in Malaya belong to the American Rubber Companies, chiefly to the General Rubber Company (United States Rubber Company).

"Regarding the yield prospects of the budded areas—from the best of the areas a production greater than that from areas planted with seed from 20 to 50 per cent may be expected. An increase of this order will, probably, be obtained from the areas budded from carefully chosen mother trees.

"As experiments on seed selection had nowhere been taken up until quite recently, no data regarding yield prospects, such as exist on budding, are yet available."

The next feature of the report is a discussion of the Keuchenius treatment of brown bast developed on the United States Rubber Company's plantations. Brown bast is one of the serious diseases of rubber trees. A recent paper on brown bast by Mr. Keuchenius is described by Mr. Ashplant as "the latest real contribution to our knowledge of Brown Bast." Mr. Ashplant goes on record as of the opinion that the Keuchenius method, when properly carried out, entirely arrests the spread of Brown Bast. The great merit of the method of treatment is that it permits the continued tapping of the tree, whereas, with all other proposed methods of treatment, trees must be rested indefinitely.

In another section of his report, Mr. Ashplant deals with the fertilization of the soil in which rubber trees grow. He emphasizes that the experiments on H. A. P. M. "are in a class by themselves. No such thorough experiments have previously been carried out in rubber."

"The H. A. P. M. experiments are, without doubt, the most important contribution to the science of manuring rubber which has yet appeared. They are in fact the only extensive and wholly reliable scientific experiments which have yet been carried out on the manuring of rubber. They provide, for the first time, convincing evidence of direct crop stimulus by manuring."

Mr. Ashplant's conclusion on this subject is as follows: "The lesson which finally emerges from the H. A. P. M. and other experience with manuring is not, then, that manuring of Hevea is necessarily or even generally, a good thing. In nine cases out of ten money spent on manure is thrown away on a very debatable yield improvement; for a result, in fact, which is entirely incommensurate with the expenditure of money and labor. It should now be clear that rubber on certain soil types will respond by giving increased yield to manurial applications. The study and recognition of such soils is work which demands careful experimental investigation, controlled, where possible, by the staff of the nearest scientific station. Whether or not trees will be benefitted can only be decided by well designed experiments extending over two or three years.

RUBBER CASE PROTECTS WATCH LOST 6 YEARS

HACKETTSTOWN, N. J.—A gold watch which he lost six years ago while ploughing on his farm near Penwell has just been found by John Vannatta. The same field has been ploughed at least once every summer since the watch was lost. This year Vannatta grew hay in the field, and while he was cutting the hay the timepiece turned up. He took the watch to a repairer, and within fifteen minutes it was keeping time again.

The farmer and repairer attribute the watch's condition to the fact that it was in a rubber case used to protect it from perspiration.

Report of Rims Inspected and Approved During June, 1925

SIZE	NUMBER	PCT.
Clincher Rims:		
26 x 3	6,194	0.3
28 x 3	851	0.0
30 x 3	19,802	0.9
30 x 3½	388,810	18.3
21 x 4	79,930	3.8
Straightside Rims (Pass.)		
28 x 3½	743,829	35.0
29 x 3½	1,143	0.1
30 x 3½	54,236	2.6
32 x 3½	8,822	0.4
28 x 4	199,427	9.3
29 x 4	159,231	7.5
30 x 4	14,916	0.7
32 x 4	23,467	1.1
33 x 4	1,699	0.1
29 x 4½	16,703	0.8
30 x 4½	136,598	6.4
31 x 4½	13,.80	0.6
32 x 4½	56,717	2.7
33 x 4½	490	0.0
34 x 4½	5,361	0.3
30 x 5	43,111	2.1
31 x 5	57,363	2.7
33 x 6	6,742	0.3
Truck Rims		
30 x 5	64,459	3.1
34 x 5	6,605	0.3
32 x 6	6,549	0.3
36 x 6	3,320	0.2
34 x 7	602	0.0
38 x 7	615	0.0
36 x 8	901	0.0
40 x 8	2,132	0.1
44 x 10	95	0.0
TOTAL	2,124,300	100.0

NOTE: 65.5 per cent of all rims produced were for balloon tires. Of the remaining 34.5 per cent, 23.0 per cent were Clinchers, 0.3 per cent were Motorcycle Rims and 4.0 per cent were Truck Rims.

Protest Against Dutch Tax

An ever-recurring subject of comment by the boards of British producers operating in the Dutch East Indies is the burden of Dutch taxation. One undertaking which has been called upon to pay what the directors characterize as an unjustifiable and excessive amount is the Waverly Plantations of Java. The total sum involved is about $40,000, representing, to a large extent, retrospective taxes, and it is not surprising that the company is making a strong protest. Whether this will meet with success remains to be seen, but at the company's recently-held annual meeting, J. S. Newlyn, the chairman, was hopeful of obtaining at least some abatement.

June Rubber Arrivals

Following is a summary of rubber arrivals in the United States during June, 1925, with totals for the first six months and a comparison with June, 1924, arrivals:

	JUNE-1924	JUNE-1925	Total Importations 6 months ending, JUNE 30. 1924	1925
Plantations	16,310	28,522	146,811	169,399
Paras	737	990	5,811	8,089
Africans	46	225	1,291	1,576
Central	115	294	255	1,158
Guayule	132	299	548	1,528
Manicoba and Matto Grosso	—	7	—	37
	17,340	30,337	154,816	181,787

Degree for G. W. Brown

George W. Brown, vice president of the United Shoe Machinery Co., has been awarded the degree of LLD. by Norwich University of Northfield, Vt. Mr. Brown was associated with the late Sidney W. Winslow and others in building up the United Shoe Machinery Co. He is a native of Northfield.

DETAIL DATA AVAILABLE ON BELGIAN IMPORTS

The recent change in Belgian tariff schedules has resulted in a change in the classifications of imports and exports of rubber goods which makes available much new information regarding the Belgian market for rubber products. Formerly the only rubber product separately reported was tires; the new classification gives separate statistics for such products as belting, hose, heels and soles, rubber shoes, rubberized piece goods, druggists' rubber sundries and several other items. Statistics of rubber goods imports are available for the first two months of 1925.

The imports of all classes of rubber tires, which are still reported as a unit, amounted to 429,814 kilos valued at 8,276,856 francs in the two months. France supplied 197,113 kilos, Italy 109,636, the United States 73,454 and United Kingdom 35,726 kilos. Michelin tires from France and Italy continue to dominate the trade.

Rubber and balata belting imports are now reported in a separate class and total 16,560 kilos valued at 395,202 francs for the two months. In this trade the United States leads with 8,397 kilos, followed by United Kingdom 5,392 kilos and France 2,316 kilos. It is of interest also that 5,375 kilos of cotton belting, 4,394 kilos of other textile belting, and 4,615 kilos of leather belting were imported in this same period. Rubber hose and tubing imports amounted to 9,767 kilos valued at 209,501 francs, the United States supplying 4,012 kilos, France 1,965, United Kingdom 1,877, Germany 1,466 and Italy 440 kilos. Rubber packing imports, 7,550 kilos valued at 140,698 francs, came mostly from the United States, 6,145 kilos.

Rubber Footwear Trade

Imports of waterproof rubber footwear consisted of 3,993 kilos of goloshes valued at 95,231 francs and 7,755 kilos of other rubber shoes valued at 183,712 francs. The United Kingdom supplied 5,915 kilos, France 3,491, and the United States 2,310 kilos of such footwear. Canvas rubber-soled shoes are not separately reported; imports of slippers, boots and shoes with textile uppers, and with either leather or rubber soles are reported together, the total imports being 12,667 kilos valued at 563,561 francs. The amount of rubber heels and soles imported is astonishingly large; during the two months 35,506 kilos valued at 409,118 francs were imported, France supplying 25,689 kilos and Great Britain 6,590 kilos, the remainder coming chiefly from Italy, Germany and Netherlands. Apparently this trade is largely in European round heels, etc., and types not produced in America.

Rubber Specialties Trade

There is also considerable importation of rubber sundries and specialties, most important among which is rubber toys. Rubber toys, balls and balloons were imported to the quantity of 51,628 kilos valued at 806,848 francs during the two months, France supplying 32,536 kilos and Austria 15,897. A large part of this trade is in rubber balls of various kinds. Imports of druggists' rubber sundries, 5,870 kilos valued at 363,528 francs came mostly from Germany, France and Great Britain, likewise the imports of air goods which totaled 1,077 kilos valued at 43,200 francs. Hard rubber products of various kinds amounting to 9,272 kilos valued at 192,696 francs came largely from Germany, Great Britain and France.

The trade in rubberized fabrics is relatively large. Only a small amount of rubberized silk piece goods (3,470 kilos) and rubberized woolen piece goods (2,090 kilos) was imported in the two months, but cotton piece goods, rubberized, amounted to 53,610 kilos valued at 1,293,325 francs, Great Britain supplying 27,153 kilos, France 14,932 kilos, and the United States 9,974 kilos. Imports of waterproof clothing are not reported.

Belgium has an elastic webbing industry which consumes considerable quantities of rubber thread. The United States exports some rubber thread to Belgium, 30,068 pounds in 1923, and 18,217 pounds in 1924. Judging from the following officially reported statistics of imports for the first two months of 1925, the United States secures only a small part of the available business. The imports are reported as 8,094 kilos valued at 359,994 francs; Great Britain supplied 5,643 kilos, Germany 2,005, and Italy 206 kilos.

Miscellaneous rubber goods imported during the two months, in addition to those enumerated above, amounted to 86,138 kilos valued at 1,212,780 francs. Crude rubber imports were heavy, amounting to 683.6 metric tons of which 67.5 metric tons were reexported. In addition 19.6 tons of balata and gutta percha were imported during the two months.

Rubber Glove Causes Discovery of Robbery

Rubber is blamed for a lot of things—but here is a case of where it was of decided help. The other morning, in the early hours, a Brooklyn cop was standing on a corner wondering about what he should eat for breakfast (or whatever it is that cops think of on their early morning rounds) when suddenly a rubber glove and a cigarette dropped out of a window above and landed at his feet.

This, remember, was a member of New York's finest! So he came to the conclusion that there was dirty work afoot. No gloves should be dropped out of office buildings at unseemly hours. So he decided to investigate. Accompanied by the building watchmen, the cop made a tour of the various floors and at last located an office where the safe had been opened and valuables taken. We regret to report, however, that the rubber glove has played no part in the discovery of the burglar—in fact, no trace has been seen of the modern rubber-gloved Raffles who dropped his calling card at the foot of the cop.

Seek Repeal of Auto Tax

Efforts to obtain a repeal of the Federal Excise Tax on automobiles and accessories are being made by various automotive organizations including the Rubber Association of America. At a meeting held early in July, at Automobile Chamber of Commerce in New York, a number of leaders in the industry met to discuss plans as to the most advisable means to use to bring about the repeal of this tax. A statement issued after the meeting states, "this special Federal levy on automobiles was strictly a wartime emergency measure. Most of the items similarly penalized in 1918 have been freed from these levies, and it is only just that all the Federal taxes on automobiles should be removed at the next session of Congress."

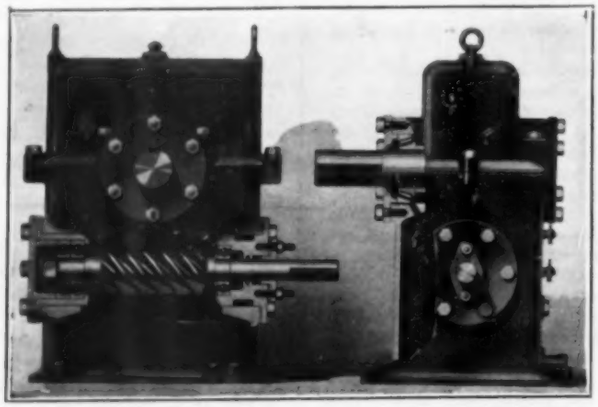
The CARTER BELL MFG CO
CARTER BELL STANDARD SINCE 1898 RUBBER SUBSTITUTES
150 Nassau Street New York

EMBOSSING CALENDERS
For Artificial Leather, Oil Cloth, Carriage and Automobile Covers
DRYING MACHINES
with Copper or tinned iron Cylinders for Cotton Ducks, Drills and Sheetings
The Textile-Finishing Machinery Co.
OFFICE, No. 83 EXCHANGE PLACE
PROVIDENCE, R. I.

FACTORY EQUIPMENT

CLEVELAND WORM GEAR REDUCTION UNIT

This new development in power transmission machinery is an addition to the Cleveland Worm and Gear Company's worm gear speed reduction units. It has a large and effective surface area and ample oil capacity, the dimensions from the shafts to the bottom of the housing and between the worm and gear centers conforming to the Company's standards. The housing walls are strengthened by internal ribs and cooling coils in the oil reservoir can be installed when desired. Tapered roller bearings are used in the gear shaft mounting, the worm shaft being mounted in heavy duty ball bearings in smaller sizes and in roller bearings for the larger sizes. Units can be furnished mounted on a rugged bed plate, assuring proper alignment between the reduction units and the driving motor or turbine.



Type AT—Cleveland Worm Gear Reduction Unit

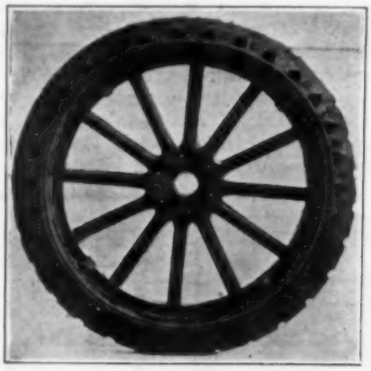
U. S. INTRODUCES NEW TRUCK CUSHION TIRE

A new cushion tire, called "Cavex," has just been announced by the U. S. Tire Co. It is designed for light trucks which usually use 30 x 3½" pneumatics and is interchangeable with tires of that size so far as wheels and rim fastenings are concerned. The tire is permanently molded on a special rim which is practically identical with the 3½" straight-side pneumatic rim.

The usual hard rubber base insures the permanency of the tire's adhesion to the steel rim and further fortifies the tire against separation due to its high tread distortion. "In designing a cushion tire for light vehicle service," says the Company, "it is required that a tire be capable of taking high distortion under reasonably light loads. This distortion must be capable of fast deformation and, therefore, requires that provision for tread distortion must be located throughout the outer portions of the tire tread.

"A study of the accompanying illustration showing the Cavex cushion tire, will disclose that a generous provision has been made for tire distortion. The deep center groove running through the tread, together with the alternately spaced "V" tread notches, enables the upper portion of the tread to assume a high distortion, under light impact forces. Provision is also made for further tread distortion by the introduction of alternately spaced triangular cavities located in the subportion of the tread.

"The time element governing tread distortion is a measure of the tire's cushioning ability. In a design such as the Cavex tire, we are able to make provision to cushion the vehicle under light impact forces due to the speed with which the upper portion of the tread is able to distort. In other words, the upper portion of the tread cushions the vehicle under light impact forces, where the time element is almost instantaneous.



"As the impact force increases, the time element increases, and the triangular side cavities allow a further distortion of the sub-portion of the tread so that we really make provision for vehicle cushioning under light impact, as well as heavy-impact forces. In replacement of pneumatic tires with a cushion tire not only must the vehicle cushioning be considered, but also the problem of traction must be taken care of.

"The "V" notches in the tread of the Cavex tire increases the tire's tractive effort in exactly the same manner as does the tread configuration on a pneumatic tire. The power losses due to the increased traction wave of cushion tires are also lessened by the introduction of the external tread notches. Heat generation and accumulation of high distortion tires will reach serious proportions unless ample provision is made for their dissipation. In the Cavex tire ample provision is made for heat dissipation through the great cooling surface area that is presented by the external cavities. Tire distortion is usually considered a measure of good vehicle cushioning.

"While this is true in a measure, it must also be recognized that tire distortion will not cushion a vehicle unless the tire is capable of returning to its normal shape instantly, or rather the speed with which the tire returns to its norml shape is a measure of the tire's cushioning ability. As rubber is practically non-compressible, it can only alter its shape through distortion. The amount of distortion depends upon the space that is allowed for such distortion."

Tire Molds Patented

Thomas Midgley, inventor of a number of tire molds recently granted U. S. Patents No. 1,542,797, No. 1,542,798, No. 1,542,799, No. 1,542,800, No. 1,542,801 and No. 1,542,802 has assigned the patents to the Fisk Rubber Co., Chicopee Falls, Mass. The molds have side wall portions of a single thickness of sheet metal and tread portions much thicker than the side portions to provide recesses for the major molding operations on the tread. They are provided with means for holding the mold closed at the tread and bead portions and so arranged as to leave the side portions free to resist only the internal pressure during vulcanization.

Cooper Opening in Knoxville

A gala occasion marked the recent opening of the new building of the Cooper Corporation, manufacturers of tires and battery jars, in Knoxville, Tenn. The new building is located at 517 State St., and was designed to take care of the greatly increased demands for Cooper products in that territory.

Over 5000 visitors crowded the various show rooms where the products of the company were on view. Dancing on the main floor, a radio concert and a drawing for several prizes were the features of the opening.

Republic Closes for Week

The Republic Rubber Co., Youngstown, Ohio, closed down for the week of July 19-25 during which time needed repairs were made. A picnic for employees was held during the week at Idora. At the time of the close the plant was operating at about 75% capacity.

Ridding Our Mills of "Painted Ships"

Obsolete Machines, which Eat Up Depreciation and Interest, are Comparable to "Painted Ships"

By Russell Byron Williams

A short distance below Hog Island, a hundred or more great, wooden ships lie idle and lifeless, lashed together, doing nothing save lift and lower with the tide of Chesapeake Bay. These ships were built by the government for transport service during the war. From the standpoint of activity, they are comparable to the Ancient Mariner's "painted ships on a painted ocean." In consideration of expense, they are an outstanding example of governmental mismanagement. For the American industrialist they hold within themselves a great lesson. It is the lesson of obsolete equipment, and one we find hard to learn.

The government made no mistake in building the ships. They were not designed to break endurance records, but to win a war. The mistake was made when the government failed to dispose of them once their usefulness was lost. But this error, so costly in money and printer's ink, is only added evidence of the human characteristic that makes us cling to things which have outlived their usefulness, just because they have *some* value, or represent an investment.

Instead of wondering why those in authority did not sell the ships to the highest bidder immediately upon the close of the war, we might well turn to our own plants and ask ourselves: "Have *we* any 'painted ships,' any obsolete equipment, eating up interest and depreciation charges in *our* plant?" If that question were asked in sincerity—if engineers possessed of the outsider's viewpoint and broader perspective were called in to make a survey of mechanical equipment—our plants would be found full of 'painted ships' which are daily exacting an incalculable toll in reduced production and increased labor costs.

Changes Must Be Made Frequently

This is the age of inventions. At no time has improved machines, amended practices or bettered methods been brought forward with greater rapidity. So rapid is the advancement of industrial science that we are continually compelled to leave behind us costly abandonments. And so far reaching are the newer developments that unless we are ready and willing to make such abandonments—unless we are ready to take our losses in obsolete equipment—we must endure increased overhead and reduced production with their attending high costs.

Perhaps no division of industry has shown more rapid development than that of power. New devices and appliances, improved machines and bettered practices, are being developed with such rapidity in the power field that almost every large generating plant, recently erected, is different in some particular from all others. Because of this, few places afford greater opportunity for economy, or provide greater chance for waste, than the power plant.

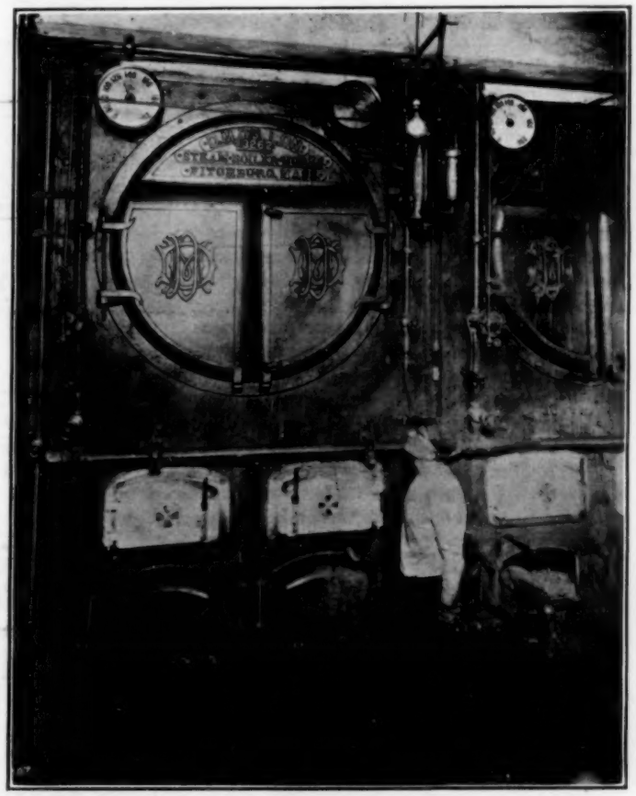
Present day power generating practice is far from being perfect. In some instances the power wasted by the industrial plant is equal to the profits of that establishment. Entirely too many plants are wasting fifty per cent of the power generated. Almost all plants (and this includes rubber mills) waste from ten to twenty per cent, the ones having cut the waste to ten per cent being on the preferred list. From whatever cause, be it ignorance, carelessness, or the human trait of hesitating before making mechanical changes for the better, wasting more than twenty per cent of the power developed indicates a power plant sickness extremely dangerous to the welfare of the company.

Among the steps possible to effect savings in the power division, the first and most fundamental is definite knowledge of your power costs. The second step is accurate information as to where the power is going. Not only should the total cost for generating power be known and defined, but that total should be detailed as to fuel costs, labor charges, water, supplies, maintenance and management. This of course requires complete metering, but meters are a necessary tool in the economical performance of any power plant. Without them, definite and accurate records are impossible, and in the lack of accurate records, no engineer can expect to reduce wastes or minimize his costs.

One instance that comes to mind is the experience of the chief engineer of a large rubber mill in the east. For a number of years this man had employed the practice of testing his CO_2 once a day with a hand set. This method was entirely unsatisfactory since the tests merely indicated the condition of the boiler at the moment the sample was taken. This condition might have been, and most probably was, entirely different fifteen minutes later. The tests did not indicate average conditions with the result that they were, for the most part, operating in the dark so far as making proper adjustment at the proper time.

CO_2 Content Increased from 8 to 12 Per Cent

In this plant seven boilers were employed, five of which are rated at 500 hp., two being 250 hp. These boilers are under load 24 hr. a day, they operating at about 180 per cent of rating. Each of them have recently been equipped with CO_2 recording instruments. These instruments are located in the most prominent place possible for the easy observation

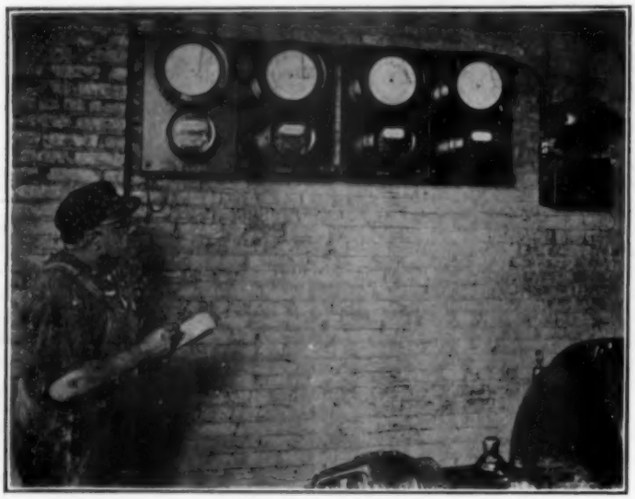


Flow Meters Result in Materially Increasing Efficiency

of the firemen. Through them any variation in the CO^2 is immediately shown, which indication makes correction possible through proper adjustment to the dampers.

The greatest value of the recorders comes from this advance warning and the ability to make adjustments before "forcing" is necessary. Under the old method their CO_2 averaged 8 per cent while not the content averages 12 per cent—a very satisfactory combustion under the prevailing conditions.

The charts and records made by these instruments show what a short time is often required to obtain a complete change in the CO_2 content. Five to ten minutes on the chart may show a big drop. Without the continuous record it would be



Battery of CO_2 Recording Instruments in Operation in a Large Eastern Rubber Factory

impossible to see this change and the boilers would be operating continually with a low CO_2. Just what increasing the CO_2 from 8 to 12 per cent means will be understood when it is said that the change has effected a direct saving of 8.5 per cent of the fuel consumed. 8.5 per cent of the annual fuel bill, expressed in terms of dollars, means $6,500 per boiler, or a total of $38,000 a year for the battery of seven boilers.

Another instance of economy effected through the installation and use of more efficient equipment is found in the experience of the chief operating engineer of a large rubber products plant in the middle west. Prior to about four years ago, this engineer was maintaining some "painted ships" in his boiler plant in the matter of feed water regulators. The type he was using proved far less efficient than the more modern types on the market, which caused him to promptly discard them in favor of the more efficient equipment. Commenting on this change, the engineer said:

One Engineer's Experience

"At the time we made the change in automatic feed water regulators, in 1922, the plant was equipped with four large boilers. Since, however, we have installed two additional boilers. Our plant maintains a steam pressure of 275 lb. at the boilers and carries about 180 deg. of superheat. The open feed water heater used in connection with our boilers raises the temperature of the water to about 210 deg. before admittance into the boilers. The boilers are equipped with mechanical stokers and run at about 300 per cent of rating.

"Before we had the automatic regulators a large amount of the stoker operator's time was spent in regulating the feed water. With the varying loads it was impossible to obtain even feed water regulation. The water level in each boiler was continually varying between wide limits and the water in the four boilers was seldom at the same level. This tended, of course, to give an uneven distribution of the load to the boilers. The practice furthermore made necessary the frequent injection of large quantities of comparatively cold water into the boilers with subsequent necessity for forcing. This practice, in addition, wasted many tons of coal every month.

"By eliminating these conditions through the installation of more reliable feed water regulators, we have increased the temperature of our feed water 20 deg., have evened its injection and maintained an even level, all of which results in a saving of about 2 per cent of our fuel. Other savings effected in the operation of the boilers by the even conditions of steam pressures, load distribution, firing, etc., are estimated at about 3 per cent. This cutting of our fuel bill means a dollars and cents economy considerably in excess of $10,000 annually."

Soot is a "Painted Ship" and should be Eliminated

Soot accumulations increase flue gas temperatures, with the result of a great loss in boiler efficiency. A. P. Lewis, Chief Engineer for the Miller Rubber Company, Akron, Ohio, learned this definitely after he had abandoned hand operation in favor of mechanical means for the disposition of the soot scale in his boiler tubes. Says Mr. Lewis:

"In the old days we used the hand lance to rid the boilers of soot. This method never proved satisfactory, as it was not only impossible to accomplish a thorough cleaning, but their use permitted the entrance of so much cold air that the boilers, immediately after cleaning, were seldom able to carry the load. For that reason, soot cleaning was necessarily a Sunday job, done when the load was light. Furthermore, the hand lance caused many accidents and was such a disagreeable job that the men resented the necessity of enduring the two hour task.

"When we installed our five new 650 hp. boilers in 1920, therefore, we equipped them with soot cleaners. These were installed in units, there being six elements to the boiler. $2,800 was the cost of the installation, and since we believe they are good for another three years, we are basing the annual depreciation at $400. Repairs and maintenance average about $40 a year and interest at six per cent totals $96.

Elimination of Soot Saved $7,000 a Year

"These cleaners are operated four times a day: at 6 a. m., 12 noon, 7 p. m., and 1 a. m. Since it requires only fifteen minutes to thoroughly blow the soot there operation costs are low. The one hour each day devoted to the operation of the cleaner elements, at 77½ cents per hour, costs $282 per year. This operation cost, added to the fixed charges, gives a total cost of about $800 annually.

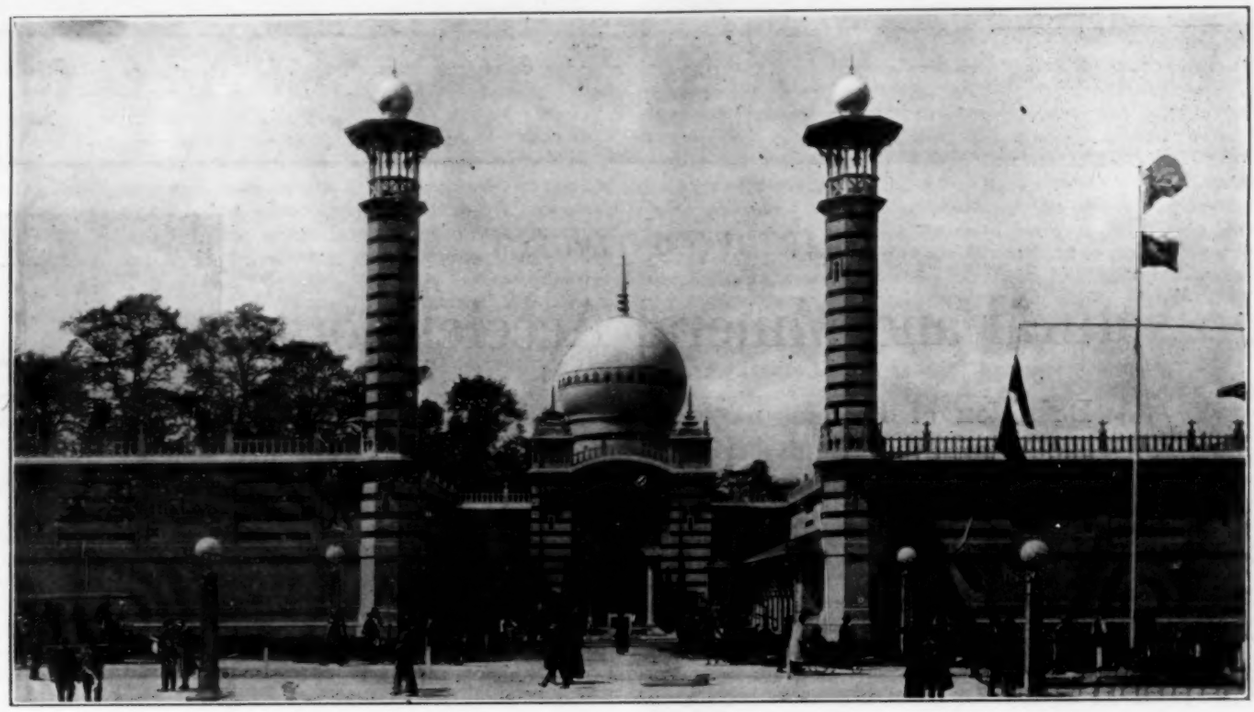
"If we did not blow the soot in our present boilers for a week (which would be the case if the old method were still employed) flue gas temperature would increase to fully 700 deg. due to the soot accumulation. This temperature would be more than 100 deg. higher than our flue gas temperature maximum is today. By keeping the temperature down to about 575 deg. we are saving at least 5 per cent of our coal, which effects a saving of more than $7,000 per year. After deducting the operation costs of the blowers we have a net saving of over $6,000 a year. This is a return on our investment of 220 per cent."

Cited here are only a few instances of the economies effected through the installation of improved equipment or bettered practices. They are examples, however, nearly every rubber mill operator may well consider for they are typical of the class of methods and equipment now being employed in many plants—which should be hunted down and discarded in favor of more economical means.

Other "painted ships" there are throughout the average rubber mill. Motors running idle, lights allowed to burn needlessly, dry bearings that should have oil, leaking faucets, insufficiently insulated heat conductors, and a vast number of other things, all contribute to high operating costs and lower dividends. "Painted ships" are seldom famed for their mobility or their earning power.

WHY A GOOD FAN BELT! Issued by L. H. Gilmer Co., Tacony, Philadelphia.

Car owner and trade are considered in the discussion which comprises this leaflet and which explains the constituents of good belting. The company's products are briefly sketched and the bulletin carries three illustrations.



The Malayan Pavilion at the British Empire Exhibition at Wembley, where the Principal Rubber Displays are Shown

Rubber Displays Again Feature at Wembley

This Year's Display of Rubber Products Features Needs of Various Exhibiting Countries

THIS year's British Empire Exhibition at Wembley contains rubber displays in every way as excellent and interesting, although entirely different, as those which were such a suecessful feature of the exhibition last year. By its exhibits this year the Rubber Growers' Association of London aims to demonstrate what rubber is and how it can be used in the daily lives of the millions who visit the great fair. A series of striking exhibits in the Malayan Pavilion drive home rubber's story. An educative exhibit explains the production of rubber, and models, pictures, specimens, etc. are used to present the product's complete story.

The R.G.A.'s display last year was a comprehensive exhibit of the numerous types of rubber manufactures, classified into the main groups of applications. This year, under the guidance of Propaganda Secretary Crowther, it has departed from the idea of a general exhibit in favor of a more intimate appeal, designed to get right into the lives of the general public.

Bearing in mind the attraction mass effects have for the sightseer, special attention has been paid to mass presentation of rubber flooring. Various types of rubber flooring are forced upon visitors' attention through the provision of thousands of yards in the various pavilions and palaces. Tiling and rubber carpeting in many artistic patterns and pleasing colors are to be seen in the Ceylon, Malay and British Government Pavilions.

In the center of the Malay Pavilion an impressive stand, 25 feet square, has been erected as the leading feature of the R.G.A.'s exhibit. It is designed to present an actual exposition to thousands of house-holders in all walks of life of the multitudinous uses of rubber in the home. The stand is divided diagonally into four triangular parts and in each of these sections the scene is laid to represent one-half of a room. A hall, bathroom, kitchen, and nursery are the rooms depicted.

The exhibit demonstrates in convincing manner how rubber combines artistic and utilitarian features in the house. In the hall tiled flooring and marbled panels of gray and green show the advantage of rubber in a restricted space for floors and walls. Two waterproof ladies' hats trimmed with rubber flowers hang on the hall stand. A girl, dressed for tennis and carying a racket and balls, is about to open the door. She is wearing crepe-soled shoes. In an umbrella stand in the corner is a crimson rubber-silk sunshade for seaside use, gaily decorated with rubber flowers so dainty in coloring that it is difficult to believe they are rubber. Beside it is a Japanese paper parasol made waterproof to withstand the occasional summer shower.

The last-mentioned exhibits are examined with much interest, for England at present is experiencing one of the largest sunshade booms on record.

It is many years since so many have been sold. The last two years were poor ones for sunshades, but good for umbrellas. The result is manufacturers are now largely turning out colored umbrellas which are decorative enough to be used for sunshades. Lately, however, real sunshades have come back. Short-haired women find them a necessity during the hot weather to protect their necks. Children's sunshades, too, are much in evidence, and are being made especially light of weight for the convenience of their bobbed-haired owners. Waterproofed silks are the most popular, and many new and original types are to be seen. Quaint shapes are the order of 1925, and there is a wide variety of square, diamond, and fan-shaped covers. Butterfly parasols are a novelty, while

(Continued on Page 273)

VULCANIZATION & ACCELERATORS

By Andre Dubosc

PART II (*CONTINUED*)

Natural and Mineral Accelerators

Definition of Proteins with General Characteristics—Studies of Betthausen, Kuster, Fischer and Others Given—Variability of Proteins in Crude Rubber—Isolation of a Catalase in Next Issue

IN the present status of the information that we have on this subject, it is most advisable to lay down an exact definition for protein matter. The best one that can be found seems to be the one given by Molinari, who says, "the proteins are the fundamental products in the formation and the constitution of vegetable and animal organisms."

The protoplasm in vegetable and animal cells, which is the source of organic life, is formed from protein substances which are also indispensible components of all foods. From the physiological standpoint the proteins are of the highest importance, but their chemical composition is so complex, that in spite of the efforts of a great many chemists, the matter is still but little understood.

Betthausen, Kuster, Nencki, Hoppe-Segler, Hammarstein, Neumeister, Plager, Hedin, Sieber, Osborne, Zinsser and particularly Emile Fischer spent many years in trying to solve the mystery which envelopes this group of chemical substances, which is perhaps the most important of all organic bodies.

General Characteristics of Proteins

The numerous substances included in the class of proteins are composed of carbon, oxygen, hydrogen, nitrogen, sulphur and at times phosphorus. These elements are found in the proteins in varying proportions, somewhat as follows: carbon, from 50 to 55 per cent, hydrogen from 6.9 to 7.3 per cent, oxygen, from 19 to 24 per cent, nitrogen, from 15 to 19 per cent, and sulphur from 0.3 to 2.4 per cent.

The classification of protein substances is a very difficult matter as only an indefinite sort of division can be made of the great many substances known by this generic name. However a certain classification may be effected and the following classes may be identified, the albumens, the globulines, the nucleo-albumens, the coagulable proteins, the histones, the protamines and the albuminoses and peptones. The latter are modified proteins. The following classes of conjugated proteins or proteids are known: hemoglobines, nucleo-proteins and gluco-proteins. Finally the albuminoids may be classed as follows: elastines, keratines and collogenes. Spongine, fibrine and sereine form a special class by themselves.

These different substances are always accompanied by enzymes, zymaes or diastates, which are ferments soluble in water and which lose their activity when heated but which are capable of decomposing the proteins at the ordinary temperature.

The Vegetable Proteins

The vegetable proteins have been studied by Osborne, see The Vegetable Proteins by Osborne, Longmans Green, London, 1918. Osborne made an intensive study of these substances and found that they are present in the saps and juices that circulate through all plants. It is therefore natural to find vegetable protein in a sap product like rubber latex. Various rubber chemists, such as, Payln, Gladstone and Hibbert suspected their presence in the rubber latex. It remained for Spence, and this is one of the great achievements on which his scientific fame is based, to isolate them in that part of the rubber which is insoluble and which Weber extracted from the natural gum. Spence published the results of his experiments in a memoir which appeared in the year 1907 and which was entitled "The Distribution of the Proteins in Rubber."

"It is known," he says, "that the latex obtained from all kinds of rubber trees and shrubs contained materials that are similar to the proteins of animal origin or of vegetable origin. This is not new knowledge by any means. These substances behave in a manner which is similar to the proteins and are retained and mixed with the rubber when the latex is coagulated."

It has been established chemically that rubber latex contains albuminoids and their presence in the coagulated condition in the crude rubber is indicated by the fact that insoluble nitrogen is found in washed samples of technically pure rubber.

The decomposition and the putrefaction which take place in coagulated substances in the moist condition, when they are allowed to remain undisturbed, is an enzymic decomposition of the protein matters in the rubber due to the enzymes, known as zymases, which are peculiar to rubber itself.

We read later of the conclusions drawn by Stevens, Eaton, Grantham and Spence himself from this fact and the observations originally made on the presence of protein matters in rubber. These conclusions were concerned with the effect of the protein matters on the vulcanization mechanism. Spence, who worked along the same lines as Weber, evaporated a solution of rubber in chloroform to a high concentration and then subjected the insoluble matter obtained to analysis. The nitrogen in this mass was determined, something that Weber neglected to do.

Inasmuch as the percentage of insoluble matter was only two per cent, the following figures indicate the percentages of nitrogen that were present in the insoluble matter, as found by actual analysis, viz., 1.9, 2.5, 2.5, 3.5 and 4.2 per cent. The maximum percentage of nitrogen was found in the rubber that had been subjected to extraction with the aid of chloroform for a period of three months.

Deductions Made from these Figures

From the mathematical results that are given above it is possible to deduce that the percentages of protein matter in the insoluble substances which are present in crude rubber vary considerably. In the least favorable case this percentage is 10.87 per cent and in the most favorable case it is as high as 33 per cent. The residual insoluble matter is constituted of oxidized rubber or Spiller resin, as has been indicated by Weber.

When the insoluble matter is treated with strong nitric acid

it gives the xanthogenic reaction, but this is not in itself a conclusive proof of the protein like character of the insoluble substances in the rubber, for rubber under the same conditions gives the same reaction.

Character of the Xanthogenic Reaction

This reaction is even more distinctive when the insoluble matters that are directly extracted from the rubber latex, after being extracted with chloroform and separated from the rubber, are tested. The protein matters that are obtained in this fashion form a brownish colored, friable mass, which possesses no elasticity at all and which does not swell up when placed in a bath of solvents. It gives the xanthogenic reaction in a very definite manner when treated with nitric acid but it does not react in any way with Millon's reagent. After these substances are burnt, the ash obtained is of considerable quantity and is found to contain lime, iron and traces of magnesia.

The percentage of nitrogen in the proteins derived from rubber latex varies from 1.9 to 4.2 per cent which corresponds in the latter case to a 33 per cent content of protein matter, if it is assumed that the albuminoids contain fifteen per cent of nitrogen, which Spence found later on was too low a figure.

In further relation to this protein it may be mentioned that Spence found, after he had completed the preliminary studies on this matter, that both in the insoluble matter that is obtained from the rubber latex direct as well as that derived from the crude rubber there was present an entire series of enzymes which he tried to characterize. Their presence in the rubber had already been noted by Parkin, by Lecomte, by Biffin and by Weber.

In fresh Fantumia latex, which has first been filtered and then dialzyed, Spence has found the presence of a primary enzymatic substance. This is a peroxydase, a substance which reacts in the presence of oxygenated water on spirit of guaiacum, as well as on the intermediate chemical, orthophenylenediamine, on phenolphthalein, on the pharmaceutical product amidol and finally on pyrogallol. When alcohol is substituted for water, that is when the reaction is made to take place in a medium of oxygenated alcohol in the place of oxygenated water, which is used in the extraction process, the peroxydase that is isolated in this manner is much more active than that which is obtained by the use of oxygenated water.

Spence has also been able to oxidize along with this peroxydase a catalase. This substance possesses the power of setting oxygen free from oxygenated water. While treating the rubber gum, after it has been coagulated, with the aid of water and alcohol, Spence was able to extract from it the same peroxydase that he isolated in the rubber latex. When alcohol was evaporated from the alcoholic solution of the enzyme, the peroxydase was recovered in the form of a vitreous mass which possessed a reddish color. When this enzymatic substance was used in the dissolved form, it was found that it possessed activity only in the presence of water which had been saturated with oxygen gas. It was also observed that this activity of the enzyme was destroyed by the presence of mineral acids and mineral alkalies, also by the salts cyanide of potassium, by mercuric chloride and by fluoride of sodium. Then again when this resin was exposed to the air and to the sun's rays, it also became inactive. Its effectiveness was not more destroyed in this manner than when it was subjected to boiling. The maximum effectiveness of the substance seemed to lie in the neighborhood of 51 degrees C.

(Continued in next issue)

Rubber Displays Again Feature at Wembley

(Continued from Page 271)

the early Victorian sunshade with its long handle and well frilled cover has come home again.

In the bathroom and kitchen of the R.G.A. display attractive flooring and panelling are featured, and every rubber device which is useful or artistic in these rooms is displayed. The kitchen shows a rubber-lined sink, rubber-topped table, squeegees, force pumps, servant's apron, and various other appliances which can be made from rubber.

The color scheme in the bathroom presents flooring and panels in their most attractive forms. A bath, basin, rubber shower attachment and rubber shower curtain give the necessary touch of reality, and there is a complete display of rubber accessories which make a joy and pleasure of the toilet. These include a sponge attached to a tube which in turn is attached to a tap. The supply of running water can be regulated, and the sponge is kept clean while being used to remove the dirt. Rubber mats to put in the bottom of the bath to prevent slipping can be seen in many vivid colors. Rubber mats for the floor take the place of towelling ones, and are also seen in various colors and designs. Elaborate landscapes or water scenes are painted on some, and the mat becomes an important item in the decoration of the bathroom. White swans sailing over blue water are a cool and suitable design on one of these mats. The mats are made of high-grade sponge rubber, which is easily washable and hygienic and is soft and resilient to the feet. An all-rubber tooth brush and shaving brush are among other accessories.

Probably the most fascinating room of all is the nursery. A dado in soft harmonious colors protects the walls from the damage likely to arise from juvenile romps, and the floor is a thing of pure delight. The inlaid border is in the form of a pattern showing Noah and the complete menagerie, while in the middle are inlaid the squares for playing hopscotch. Rubber animals and toys are much in evidence and a radio set for the reception of bedtime stories illustrates one of the most recent and largest applications of hard rubber. Brightly painted washable rubber lampshades are among other artistic productions.

All these rooms are actually arranged and furnished so as to form a true picture of the possibilities of the uses of rubber in the everyday home. Attractive wax figures are utilized to give the personal note. This mode of appeal to the public was determined after very careful thought and analysis, and it is certainly stimulating the public interest in the domestic applications of rubber to an extent which will materially benefit the entire industry.

Official rubber exhibits in the Malay Pavilion are organized by the governments of the Straits Settlements, the Federated Malay States, and the Unfederated Malay States. Other displays are arranged by Kaye's Rubber Latex Process, Ltd. (stationery, cardboard, etc.) and Pure Plantation Rubber Products, Ltd. (rubber goods of all kinds.).

The India Rubber Manufacturers' Association has not this year organized a section for British manufactures, as it did last year in the Palace of Industry, but various rubber exhibits are scattered throughout the various sections in this pavilion.

In the Canadian Pavilion the following concerns are exhibiting their products:—Firestone Tire & Rubber Co., of Canada, Ltd., Hamilton, Ont.; Miner Rubber Co., Ltd., Montreal; Goodyear Tire & Rubber Co., of Canada, Ltd., Toronto; W. J. Anderson Mfg. & Rubber Co., Ltd.; F. E. Partridge Rubber Co., Ltd., Guelph, Ont.; K. & S. Tire & Rubber Goods, Ltd., Toronto; Sterling Rubber Co., Ltd., Guelph; and Kaufman Rubber Co., Ltd., Kitchener, Ont.

The Wembley of 1925 is, as a whole, a vastly different exposition from the Wembley of 1924. Last year a record of power and potentiality of the countries composing the British Empire was presented for inspection. This year, while the main objects of the exposition remain the same, greater emphasis is laid upon the actual needs of the exhibiting countries. Americans can see what America can supply them with, Frenchmen what France can supply, and so on. In the process interest has been added to the exposition. Working models and scenic effects largely take the place of last year's stacks of raw materials. In a word Wembley is the greatest collection of human activities ever brought together in one place.

EDITOR'S REVIEW DESK

Books **Trade Catalogs** **Articles**

PNEUMATIC TIRE ELEMENTS AND DEVELOPMENT. By L. J. D. Healy, Technical Superintendent, Fisk Rubber Co., Cudahy, Wis. Published in *The Journal of the Society of Automotive Engineers* for April.

A detailed description of the various steps in the process of transforming latex into material for use in automobile tires is given in this article. From the tapping of the tree until the finished tire is ready for shipment to the dealer, the evolution of the product is carefully outlined. A portion of the article is given to the discussion of the conditions that called for the incorporating of the balloon tire into automobile equipment.

* * *

THE MODEL STOCK PLAN: More Profits from Merchandising. By Edward A. Filene, President, Wm. Filene's Sons Company, Boston. 159 pp. Bound in Cloth. Published by A. W. Shaw Company, Chicago.

Simplification and business efficiency, which virtually mean the elimination of all unnecessary processes and products in the manufacturing and selling ends of industry, are yearly assuming a more important place in industrial regulation and distribution.

The model stock plan outlined in this book comes as a result of the experience and observation of one of America's leading merchants, over a long period of time. To be able to fill orders, in quantities desired, immediately upon request, at a consistent price is the object of the methods advocated. Briefly, the plan consists of the determination of low, medium and high prices at which the largest quantity of merchandise can be sold, concentrating 85 per cent of the stocks at these prices in full lines, and the provision of a scientific basis for building up stocks. With the matching of stocks on hand (staples, novelties, etc.) to demand and the regulating of sizes to meet needs at various times, the problem resolves itself into the regulation of the time of buying from manufacturers to the best advantage.

* * *

THE ELECTRODEPOSITION OF RUBBER. By S. E. Sheppard and L. W. Eberlin, Eastman Kodak Co., Rochester, N. Y. Presented before the Division of Rubber Chemistry at the 69th Meeting of the American Chemical Society, Baltimore, April 6-10. Published in *Industrial and Engineering Chemistry* for July.

Rubber particles in natural latex (ammoniated) and in artificial rubber dispersions in water are negatively charged. In an electric field they move to the anode. This effect has been used previously to coagulate raw rubber electrically. It has been found possible to admix with sulphur, pigments, and accelerators, latex, or rubber-in-water dispersions, and by electrolysis to deposit rubber compounds, integrally, upon both metals and other materials to form coherent, homogeneous layers of considerable range of thickness. These deposits can be vulcanized according to any desired cure and vulcanization factor.

The process can also be used to impregnate fabrics. The coatings can be deposited either in an adherent or nonadherent form, and be vulcanized on the support or independently. The character of the coating on metals depends upon the (anode) over-potential for oxygen, control of which is therefore important. The process can be applied to the continuous coating of sheet, wire and fabrics.

* * *

STANDARDS OF PRACTICE FOR RUBBER BELTING. Issued by the Woven Hose & Rubber Co., Cambridge, Mass. 71 pp.

Requirements that must be met by rubber belting are discussed in the first section of this catalog and illustrations showing certain steps incident to manufacture are given.

Bull Dog and Perfection Beltings, the products of the Boston Woven Hose & Rubber Co. form the subject of the next two chapters, the balance of the book being devoted to the application and care of these types of beltings, rules for belting practice and tables showing horsepower at varying rates of speed on both brands.

UNITED STATES GOVERNMENT MASTER SPECIFICATION FOR RUBBER VALVES. Circular of Bureau of Standards No. 234.

This specification, officially distributed by the Federal Specifications Board Dec. 29, 1923, calls for rubber valves of either Grade A, hard, grade B, medium, or grade C, soft. A vulcanizd rubber compound, containing no substitute of any kind, and free from pitting, blisters, air cheeks, etc., of uniform thickness and a circumference concentric with hole at center, is required. General requirements allow a diameter and thickness of 1/32 inch difference, either under or over. Dry heat and steam heat tests are given, with detailed requisites for the three grades.

* * *

UNITED STATES GOVERNMENT MASTER SPECIFICATION FOR RUBBER PACKINGS AND GASKETS (MOLDED SHEET AND STRIP). Circular of the Bureau of Standards No. 235.

Grades, material, and general and detailed requirements are briefly outlined in this circular, with notes on methods of inspection, marking and packing. Two tables showing tensile strength, ultimate elongation and weight of packing are included.

* * *

UNITED STATES MASTER SPECIFICATION FOR CLOTH INSERTION RUBBER PACKING. Circular of the Bureau of Standards No. 236.

Grades A and B are used as standard. Alternate layers of rubber and frictioned fabric are required for composition, with both faces of the packing similar. One ply fabric 1/16 inch in thickness, with fabric insertion 35 to 50 threads per inch are some of the general requirements. An outline of detailed requirements is given, with tables of weight and brief recommendations are made for inspection, packing, etc.

* * *

UNITED STATES GOVERNMENT MASTER SPECIFICATION FOR SURGEONS' RUBBER APRONS. Circular of the Bureau of Standards, No. 247.

Single or double coated rubber sheeting is specified for the manufacture of this article. Consisting of one piece, black or maroon, the body is to be 36 inches long and 33 inches wide, with a bib 10 inches from the body of the apron to the top. Detailed requirements cover rubber content, fabric, finished sheeting and resistance to steam.

* * *

VULCANIZATION ACCELERATORS. Bulletin No. 4. Issued by E. I. du Pont de Nemours & Co., Inc., Wilmington.

This bulletin deals with the source, manufacture and properties of rubber pigments. Feeling that such an outline would be of interest and value to production and purchasing executives, the compilers have given a brief discussion to each of the commonly used mineral fillers, pigments and reinforcing agents and also mineral hydrocarbons and vegetable oils, used as softeners. Two pages are devoted to tables showing the specific gravities of the usual compounding materials and the products of their reciprocals with each digit. There are sections explaining the use of this data and also a table giving the range of particle size and shape for solid compounding ingredients.

* * *

ANNUAL REPORT OF EXECUTIVE COMMITTEE AMERICAN SOCIETY FOR TESTING MATERIALS. Read at annual meeting in Atlantic City, June 24.

This report outlines the year's activities of this Committee and shows an increase in membership, which now numbers 3718. A detailed balance sheet is given, as well as a list of the Society's publications over a twelve months' period. The reports of various sub-committees are included briefly and the proposed establishment of an annual medal, to be known as the Charles B. Dudley Medal, and an annual lecture, to be known as the Edgar Marburg Lecture, is advanced.

The Market Place

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Machinery, fabrics, chemicals, compounding ingredients, crude and reclaimed rubber, consulting chemical and engineering services, etc.

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CARBONEX — Increases strength and durability of any compound while reducing the cost.

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Brand. Absolutely uniform and gritless. Send for five-pound laboratory sample and prices.

The American Pigment Co.

Ravenna, Ohio

THE MARKET PLACE Section Continued on Second Page Following.

MARKETS

Cottons and Fabrics

NEW YORK, July 15, 1925

The drop in price of cotton, occurring at intervals recently, developed to be only a temporary tendency. The prospects of rain breaking the long drought in Texas, and the later report that from one to three inches had fallen in the south central part of that state caused a decline of from 20 to 26 points. Because of this realizing and selling took place in sections of the South wherethe crop was most promising. However, the rumor of heavy rains was not sustantiated, the fall being insufficient and occurring at some points where it had no effect on the cotton crop. This, together with the meager prospects of further rains, produced a reaction which resulted in heavy covering and a scarcity of contracts. The Government's acreage and condition report contributed to the decline in price for several days, but this was overcome by the conditions resulting from the drought situation.

With the issuance of the next Government report only a week off, there is a growing fear that it may prove unfavorable. Last year the report at the corresponding date showed a loss in condition of 2.7 per cent and a reduction in the indicated yield from 12,144,000 to 11,904,000 bales, running prices up 200 points, and within a week 250 more. Unofficial estimates put the condition at 71.9 per cent, against 68.5 per cent on June 25th, with an approximate total production of 14,339,000 bales.

During the past few days the smallness of offerings was a prominent feature of the market, causing much comment. High temperature has caused the cotton plants to open early, which may cause hedges in August, although none of any moment are expected until September. Today's quotations showed a set-back of 34 to 49 points from the two days gain of a cent, resulting directly from immediate realizing on the part of some profit-takers. Quotations follow:

New York Cotton Prices

	Open	High	Low	Close	Close July 1
July	....	24.27	23.75	23.88	23.03
Oct.	24.40	24.49	24.00	24.02	23.97
Dec.	24.49	24.58	24.09	24.11	24.07
Jan.	23.87	23.95	23.51	23.52	23.59
March	24.32	24.25	23.80	23.81	23.82
May	24.45	24.52	24.08	24.08	....

LATE NEWS BULLETIN

Tire Prices Again Increase

As predicted elsewhere in this issue, we learn as we go to press of the fourth increase in tire prices. Crude rubber continues to soar with $1.23 quoted on July 20. Tire price increases have already been announced by Goodrich, U. S. Tire, Kelly, Fisk, Goodyear, and others are working on new lists. Increases average 10 per cent for pneumatics and solids and 15 per cent on tubes.

TIRE FABRICS

The situation in tire fabrics continues to be quiet. Sales have not been heavy and tire mills have not provided for other than immediate needs. Mills have been affected by the rubber situation, which is of course, of great concern to tire companies. Only occasional covering of the last quarter of the year fabric requirements has taken place. Reports from Akron state that 5,000,000 pounds of tire fabric were reported to have been bought in that district during the past ten days ranging between peeler cords and Egyptians. Prices have been low and though inquiry has been quite large, the basis of quotations have caused apathy on the part of a section of the trade. In their eagerness to get business some tire factors have been willing to cut quotations to the bone. Today's prices are:

CORD FABRICS

Combed Sakellarides		Nominal		
Combed Peeler	lb.	Nominal		
Carded Peeler		.49	@	.51
Combed Egyptian uppers	lb.	.65	@	.70
Carded Egyptian uppers	lb.	.58	@	.61

SQUARE WOVEN

17¼-ounce Egyptian uppers, combed	lb.	Nominal		
17¼-ounce Egyptian uppers, carded	lb.	.60	@	.63
17¼-ounce Sakellarides, combed	lb.	Nominal		
17¼-ounce Peeler, carded	lb.	.44	@	.48

Ducks—Mills report fair business in cotton duck, many of them having enough business to keep them running through July and partly through August. A demand for heavy goods, divided among all constructions, has been noted.

Burlaps—Activity so pronounced a few days ago in the burlap market has quieted down and very little business has been done. Speculative buyers bought up a great part of the lower priced offerings of the past few days, causing inquiries from bag houses, with little result. Generally speaking, however, the situation is steady.

SHEETINGS

40-inch 2.50-yard	yd.	.15	@	—
40-inch 2.85-yard	yd.	.12¾	@	.12¾
40-inch 3.15-yard	yd.	.13½	@	—
40-inch 3.60-yard	yd.	.10¾	@	—
40-inch 3.75-yard	yd.	.10	@	—
40-inch 4.25-yard	yd.	.08¾	@	.08⅞

DUCKS

Belting	lb.	.40	@	.42
Hose	lb.	.40	@	.42
Enameling	lb.	.43	@	.49
Shoe Ducks	lb.	.48	@	.49
Single filling	lb.	.19	@	.21
Double filling	lb.	.22½	@	.23

BURLAPS
(Carload Lots)

7½-ounce 40-inch	7.80	@	7.85	
8 -ounce 40-inch	7.90	@	7.95	
10 -ounce 40-inch	10.20	@	10.25	
10½-ounce 40-inch	10.30	@	10.35	

TIRE FABRICS

OF EVERY DESCRIPTION

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AMERICAN COTTON FABRIC CORPORATION

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Are represented in this section. Purchasing agents can rely on the concerns listed as thoroughly reliable in every way.

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Gibraltar Rubber Corp.
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FABRICS—Tire fabrics of every description, Sea Island, Egyptians, Peelers.
Taylor, Armitage & Eagles, Inc.
120 Broadway New York

LINERS — PROCESSED
For
Various Rubber Stocks
The Cleveland Liner & Mfg. Co.
5508 Maurice Ave., Cleveland, O.

DIPHENYLGUANIDINE
Aero Brand, product of the highest purity from dependable source of supply.
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511 Fifth Ave. New York City.

FABRICS—Stockinets, Jersey Cloth and Special Fabrics for the Rubber Industry.
U. S. Knitting Co., Inc,
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MANDRELS--CIRCULAR
and Economy Calender Shells
Prompt Service—Let us quote you.
The Clyde E. Lowe Co.
2976 E. 81st St., Cleveland, Ohio

DRY KILN—for drying crude rubber and chemicals—Hunter Process.
Carrier Engineering Corporation
750 Frelinghuysen Ave. Newark, N. J.

FACTICE—Prevents blooming, makes colors fast and a smoother batch.
Stamford Rubber Supply Co.
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MOLDS AND CORES—
Tire building equipment; general machine work.
The Akron Equipment Co.
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FABRICS—Tire fabrics, Egyptian—Peeler, Karded and Combed, Cord and Square.
Cabarrus Cotton Mills
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55 Worth St. New York
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GUAYULE—"Duro" Brand washed and dried ready for compounding.
Continental Rubber Co.
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MOLDS & CORES—Tire building machines; tire finishing stands; tubing machines; hydraulic presses.
The Akron Standard Mold Co.
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FABRICS—Spots and Contracts: Tire Fabrics, Enameling ducks, Tube Wrapping Tapes.
H. Frank Jones
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HARD RUBBER, quality hard rubber goods of every description.
Vulcanized Rubber Co.
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MOLDS & CORES—for automobile tires; general machine work.
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FABRICS—Tire fabrics—coarse builders, chafers, breakers in all grades.
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LAWRENCE & CO.
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HEEL BURRS—with central holes; flat and cupped.
J. H. Sessions & Son
279 Riverside Ave. Bristol, Conn.

RECLAIMED RUBBER—
Uniformity, reliability, cleanliness.
Pequanoc Rubber Co.
Butler, N. J.

FABRICS—Tire, cords, enameling ducks, drills, sheetings, osnaburgs.
J. H. Lane & Co.
250 West 57th St. New York City

RUBBER FACTORIES
use vast quantities of raw materials and equipment. Let the industry know how well you can serve it through a listing in this section.

RECLAIMED RUBBER—
for all purposes.
Rubber Regenerating Co.
Naugatuck, Conn.

THE MARKET PLACE Section Continued on Second Page Following.

Reclaimed Rubber

NEW YORK, July 16, 1925

Reclaimers report an unprecedented demand for all grades of stocks and are being hard put to produce enough to fill the needs of manufacturers. The industry has never been so active, says a leading reclaimer, and from the present condition of the crude rubber market, there seems to be no chance of a let-up. Prices have increased materially, largely as a result of higher scrap prices demanded by dealers. Quotations follow:

Friction (Uncured)			
No. 1	lb.	.60 @	.70
No. 2	lb.	.40 @	.50
High Tensile Black			
Super-Reclaim No. 1	lb.	.31 @	.33
" " No. 2	lb.	.19½ @	21
Shoe			
Unwashed	lb.	.09¼ @	.09¾
Washed	lb.	.12¾ @	.13¼
Tube			
No. 1 (Floating)	lb.	.23 @	.25
No. 2 (Compounded)	lb.	.19½ @	.20½
Tires			
Black unwashed	lb.	.09¾ @	.10¼
Black, washed	lb.	.12 @	.12½
Dark Gray	lb.	.15½ @	.16
Light Gray	lb.	.17½ @	.18
White	lb.	21½ @	.22
Truck	lb.	.09½ @	.10
Miscellaneous			
Mechanical Blends	lb.	.08 @	.09
Red, High Grade	lb.	.20 @	.20¼

Scrap Rubber

NEW YORK, July 16, 1925

Scrap dealers have taken such cognizance of the agitation for the use of more reclaimed rubber that they are holding off for higher prices. It is difficult to buy scrap in any quantities for dealers are asking more than reclaimers are willing to pay. Stocks however are ample and should there be any break in crude, large amounts of scrap are expected to be dumped on the market at bargain prices. Most grades have been revised upwards as follows:

Auto tire peelings		.02¼ @	.02½
Standard White auto	ton	33.00 @	35.00
Mixed auto	ton	28.00 @	30.00
Bicycle tires	tons	10.00 @	12.00
Clean solid truck tires		38.00 @	40.00
Boots and shoes		.02⅛ @	.02½
Arctics, untrimmed		.01 @	.01¼
Arctics, trimmed		.01⅜ @	.01½
Inner tubes, No. 1		.08½ @	.09
Inner tubes, compounded		.07½ @	.07¾
Inner tubes, red		.06¾ @	.07
Battery jars, clean hard rubber		.01 @	.01⅛
Air Brake Hose	ton	16.00 @	18.00
Rubber hose	ton	10.00 @	12.00

Crude Rubber

NEW YORK, July 15, 1925

Today's market for crude hit a new high level which had not been touched for almost 13 years when spot ribbed smoked sheet sold at $1.12. The last time quotations equalled this price was in the middle of September, 1912. And from the steadiness of the market the top has not been reached yet.

At the beginning of the month the market ruled firm at 81 @ 82 cents for spot delivery and 68 @ 69 for Oct.-Dec. position. Within a period of two weeks the spot has advanced 31 cents to the new high and the other position sold at 94½ @ 95½ cents with August quoted at $1.05. Such radical changes are viewed with alarm by many rubber manufacturers for even with higher tire prices there is little possibility of profits in the second half of this year for those factories which are depending on stocks bought at current levels. The smaller tire plants are especially hard hit by the price situation and no relief is in sight for them for even if restriction were to be lifted immediately not enough additional stock could be put on the market to bring the price down appreciably.

The first week of July showed comparatively little activity except toward the end when some interest was manifest in July position. The second week, however, opened strongly with information of further reduction of stocks in London to 4,448 tons. Price increases of 1 to 2 cents daily was the rule for the first week in the month and on the 7th had advanced to 90c for spot and 87 for August. The following day, however, reports of strength in London drove prices up so that 97c was being asked in New York. The market closed that day at 96. Activity continued for the next few days and quotations continued their rise with the following prices asked: $1.00 on July 10, 1.07 on July 11, 1.11 on July 13 following which there was a slight reaction to 1.06 yesterday. Closing was strong and this morning's opening showed firmness with buyers in evidence.

A sharp advance resulted and soon the 1.12 level was reached. It is said that there is a decided interest in several positions later in the year but that little inquiry for spot delivery is in evidence. Paras have followed ribs and were quoted at 1.01, the highest in years. Little chance of any relapse in prices is expected and in some quarters a level of 1.50 is looked for. Today's quotations follow:

NEW YORK MARKET

Plantations—			
Ribbed Smoked Sheets			
Spot	1.11	@	1.12
July	1.10	@	1.11
August	1.04	@	1.05
September	1.01	@	1.02
Oct.-Dec.	.94½	@	.95½
January-March	.88	@	.90
First Latex, crepe spot	1.10	@	1.11
Amber Crepe, No. 2, spot	1.03	@	—
" " No. 3,	1.02	@	—
" " No. 4,	.98	@	—
Brown Crepe, Rolled	.90	@	—
" " Clean, thin	1.01	@	—
" " Specky	.99	@	—
Pontianac—			
Bangermassin	Nominal		
Palembang	Nominal		
Prime Pressed	Nominal		
Sarawak	Nominal		
Paras—			
Upriver Fine	.98	@	1.01
" Medium	.80	@	.82
" Coarse	.66	@	.68
Islands, Fine	.90	@	.91
Madeira Fine	1.01	@	—
Acre Bolivian, fine	.91	@	—
Tapajos, fine	.85	@	—
Cut Beni Bolivian, fine	.90	@	—
Caucho Ball—			
Upper, shipment	.65	@	—
Centrals—			
Central, scrap, prime	.64	@	—
Corinto, scrap	.65	@	—
Esmeraldo, sausage	.65	@	—
Guayule, w and d	.65	@	—
Africans—			
Benguela, No. 2	Nominal		
Congo, upper, black	Nominal		
" " red	Nominal		
Kassai, Prime Red	Nominal		
Balata—			
Black, Columbia	.53	@	.54
" Cuidad	.62	@	.63
Surinam, sheet	.77	@	.78
Gutta Percha—			
Siak	.25	@	—
Red Macassar	2.80	@	3.00
Chicle—			
Mexican, Yucatan	.72	@	—

LONDON MARKET

Standard Ribbed Smoked Sheets—	
Spot	52½d
July	52
August	50½
September	49¼
Oct.-December	44¾

SINGAPORE MARKET

Standard Ribbed Smoked Sheets—	
Spot	44¼d
July	44¼
August-Sept.	43⅝
Oct.-December	40½

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CHEMICALS & COMPOUNDING INGREDIENTS

Accelerators — Colors — M.R. — Compounding Ingredients
Softeners — Vulcanizing Ingredients — Rubber Substitutes

NEW YORK, July 15, 1925—Shipments during July up to this writing have been very satisfactory. Some factors among the chemical and compounding ingredients houses report that this month has been the best for a long time and from present indications they expect August to be excellent. Reports from Akron and other rubber centers indicate that production is still on a three-shift basis and denial is made from tire manufacturers of any curtailment. The chemical market as a whole is firm with a few lower prices quoted. Summer footwear production has held up well and mechanicals have also been produced in large quantities. A conservative buying feeling is in evidence among the smaller tire factories but there is no lack of demand from the larger plants. Prices follow:

ACCELERATORS

Organic			
Aldehyde ammonia, crystals	lb.	$ .90 @	.93
Aniline oil, drums	lb.	.17 @	.17½
Di-Ortho-Tolyiguanidine	lb.	1.10 @	1.13
Diphenylguanidine	lb.	.95 @	.98
Ethylidene aniline	lb.	.60 @	.65
Excellerex	lb.	.35 @	.40
Formaldehyde-Aniline	lb.	.40 @	.42½
Hexamethylene-tetramine	lb.	.80 @	.82½
Paraphenylenediamine	lb.	1.25 @	1.30
Piperidine-Piperidyldithio-Carbamate	lb.	5.00 @	—
Super-Sulphur No. 1	lb.	.50 @	—
Super-Sulphur No. 2	lb.	.18 @	.30
Tensilac, No. 41	lb.	.65 @	—
Tuads	lb.	4.50 @	6.00
Thiocarbanilide, kegs	lb.	.24 @	.25
Triphenylguanidine	lb.	.70 @	.75
Vulcone	lb.	.75 @	.79
Zimate	lb.	5.00 @	—
Inorganic			
Lead, sublimed blue	lb.	.10 @	.11
Lead, white	lb.	.10¼ @	—
Litharge, domestic	lb.	.11 @	—
Lime, superfine	lb.	.01½ @	.02
Magnesia, calcined, light	lb.	.24 @	.25
extra light	lb.	.40 @	.45
heavy	lb.	.04 @	.06½

COLORS

Blacks			
Arrow "Aerfloted"	lb.	.07 @	.11
Bone Black	lb.	.05½ @	.09
Carbon "	lb.	.07 @	.11
Drop "	lb.	.06 @	.14
Ivory "	lb.	.12 @	.45
Lamp "	lb.	.12 @	.40
Micronex	lb.	.08 @	.12
Thermatomic carbon	lb.	.04 @	.08
Blues			
Cobalt	lb.	.21 @	.26
Prussian	lb.	.34 @	.36
Ultramarine	lb.	.08 @	.35
Browns			
Iron oxide	lb.	.02¼ @	.06¼
Sienna, Italian	lb.	.04 @	.14
Umber, Turkey	lb.	.04 @	.06
Vandyke, domestic	lb.	.03 @	.03½
Greens			
Chreme, light	lb.	.28 @	.29
medium	lb.	.30 @	.31
dark	lb.	.32 @	.34
commercial	lb.	.10 @	.10½
Chromium Oxide, bbl.	lb.	.33 @	.35
Reds			
Antimony crimson, 15/17 F.S.	lb.	.43 @	.45
sulphur free	lb.	.45 @	—
golden, 15/17 F.S.	lb.	.17 @	—
pentasulphide, pure,	lb.	.35 @	.38
15/17 F.S.	lb.	.33 @	.36
red sulph. 15-17F.S.	lb.	.16 @	.20
Indian English	lb.	.11 @	.15
Oximony	lb.	.13½ @	—
Para toner	lb.	.90 @	1.00
commercial	lb.	.13½ @	.14½
Red oxide, reduced	lb.	.04 @	.12
pure	lb.	.12 @	.14
Toluidine toner	lb.	1.95 @	2.10
Venetian red	lb.	.01½ @	.03
Vermillion, quicksilver, English	lb.	1.40 @	1.50
domestic	lb.	.15 @	.25
Whites			
Albalith	lb.	.06⅝ @	.06⅝
Aluminum bronze		.60 @	1.25
Lithopone, Akcolith	lb.	.06 @	.06½
Lithopone, Azolith	lb.	.05⅝ @	.06⅛
Zinc Oxide—American Process XX red	lb.	.07¾ @	.08⅛
Kadox, black label, kegs	lb.	.10⅝ @	.11¼
blue " " "		.09⅝ @	.10⅛
red " " "		.08⅝ @	.09⅛
American Azo: ZZZ (lead free)	lb.	.07¼ @	.07¾
ZZ (under 5% leaded)	lb.	.07 @	.07½
Z (8-10% leaded)	lb.	.06¾ @	.07¼
Zinc Oxide—French Process White seal	lb.	.12 @	.12¼
Green seal	lb.	.10¾ @	.11¼
Red seal	lb.	.09¾ @	.10¼
Yellows			
Chrome, light		.17½ @	.18½
dark and medium	lb.	.18 @	.18½
Cadmium Sulphide	lb.	2.00 @	2.50
Ocher, French medium	lb.	.02½ @	.02⅝
domestic	lb.	.01½ @	.02½

COMPOUNDING INGREDIENTS

Aluminum Flake (f.o.b. plant)	ton	21.85 @	24.50
hydrate light	lb.	.17 @	.18
Ammonia carbonate	lb.	.13 @	.15
Asbestine	ton	18.00 @	20.00
Barium carbonate	ton	54.00 @	56.00
Barium Dust	lb.	.05 @	.06
Barytes southern off-color, ton		12.00 @	18.00
Western prime white ton		22.00 @	23.00
imported	ton	27.00 @	35.00
Basofor	lb.	.04½ @	—
Blanc fixe, dry f.o.b. works	lb.	.04 @	.04¼
Carrara filler	lb.	.01¾ @	.02
Chalk, precip., extra light	lb.	.04¼ @	.05
heavy	lb.	.03¼ @	.04
Clay, China, domestic	ton	13.00 @	22.00
Catalpo (fact.)	ton	35.00 @	40.00
Dixie	ton	20.00 @	35.00
Blue Ridge, Dark	ton	9.00 @	—
" " Light	ton	12.00 @	—
Langford	ton	12.00 @	22.00
Glues, extra white	lb.	.21 @	.29
medium white	lb.	.18 @	.24
cabinet	lb.	.15 @	.23
cabinet low grade	lb.	.14 @	.17
common bone	lb.	.11 @	.14
Graphite flake, bbls.	lb.	.06½ @	.12
Lump	lb.	.04 @	.07
Infusorial earth, powdered	ton	23.00 @	25.00
bolted	ton	15.00 @	20.00
Liquid latex	gal.	2.50 @	—
Magnesia, carbonate	lb.	.08¼ @	.09
Mica, powdered	ton	65.00 @	80.00
Rotten Stone (powdered)	lb.	.02½ @	.04½
Soapstone, powdered	ton	15.00 @	22.00
Starch, powdered	cwt.	4.07 @	4.55
Talc, domestic	ton	16.00 @	18.00
Terra Alba	cwt.	1.25 @	2.00
Tripoli, white	lb.	.02 @	.02¼
Whiting, commercial	cwt.	1.00 @	1.15
gilder's bolted	cwt.	1.25 @	1.35
English cliffstone	cwt.	1.50 @	—
Paris white American	cwt.	1.50 @	1.75
Quaker	ton	13.00 @	15.00
Sussex	ton	8.00 @	10.00
Wood pulp XXX	ton	35.00 @	—
" " X	ton	25.00 @	—

MINERAL RUBBER

Genasco (factory)	ton	50.00 @	52.00
Granulated M.R.	ton	35.00 @	45.00
Hydrocarbon, Hard	ton	29.00 @	35.00
Hydrocarbon, Soft	ton	29.00 @	35.00
320/340 M.P. hydrocarbon (c. l. factory)	ton	47.00 @	52.00
300/310 M.P. hydrocarbon (c. l. factory)	ton	42.00 @	47.00
Synpro, granulated, M.R. (factory)	ton	55.00 @	70.00

SOFTENERS

Acids			
Acetic, 28%	cwt.	3.00 @	3.25
Cresylic, 97%	gal.	.59 @	.63
95%		.56 @	.60
Muriatic, 20%	cwt.	.90 @	1.00
Nitric, 36 degrees	cwt.	4.50 @	4.75
Sulphuric, 60 degrees	ton	10.00 @	11.00
66 degrees	ton	14.00 @	15.00
Tartaric, crystals	lb.	.29 @	—
Alkalies			
Caustic soda, 76%	cwt.	3.60 @	—
Soda ash, 58% C.L.	cwt.	1.43 @	1.45½
Oils			
Castor, No. 3, bbls.	lb.	.16¼ @	—
Corn, crude, bbls.	lb.	.12 @	—
refined	lb.	.13 @	—
Cottonseed, crude		.09¾ @	—
Glycerine C.P. drums	lb.	.19 @	.19½
Lins. ed, Raw C.L. bbl.	gal.	.97 @	1.03
Palm, Niger	lb.	.09 @	—
Lagos	lb.	.09¾ @	—
Peanut, domestic, crude	lb.	.13 @	—
Petrolatum, white		.12 @	.12¼
amber		.03⅞ @	.04
dark amber	lb.	.03⅝ @	.03¾
Pine, steam distilled	lb.	.65 @	.66
Rapeseed, refined	gal.	1.00 @	—
blown	gal.	1.05 @	—
Rosin, first rectified	gal.	.58 @	.60
second rectified	gal.	.61 @	.63
Soya Bean, crude		.13¼ @	.13½
Tar, commercial	gal.	.30 @	.32
Resins and Pitches			
Parra M.R.	lb.	.06 @	.07
Tar Retort	bbl.	15.00 @	—
kiln burned	bbl.	15.50 @	—
Pitch, Burgundy	lb.	.05 @	.06½
coal tar	gal.	.05½ @	.06
pine	bbl.	6.00 @	6.50
Rosin, grade K	bbl.	10.35 @	—
Solvents			
Alcohol, denatured, No. 1 bbls.	gal.	.52½ @	.56½
Benzol, 90%	gal.	.22 @	—
pure		.24 @	—
Carbon bisulphide	lb.	.06 @	.07
tetrachloride	lb.	.07 @	.08
Dimethylaniline	lb.	.48 @	.50
Motor gasoline, steel bbls.	gal.	.22 @	—
Naptha, V. M. & P.	gal.	.21 @	—
Toluene	gal.	.26 @	—
Turpentine, spirits	gal.	.97 @	.99
wood	gal.	.85 @	.90
Waxes			
Bayberry	lb.	.20 @	.21
Beeswax	lb.	.55 @	.65
Carnauba, No. 1	lb.	.36 @	.37
Ceresin, white	lb.	.10 @	.11
Montan, crude	lb.	.06 @	.06½
Ozokerite, black	lb.	.24 @	.25
green	lb.	.26 @	.30
Paraffine White, A.M.P.	lb.	.05⅛ @	.05¼
Yellow A.M.P.	lb.	.05⅝ @	.05½
Sweet wax	lb.	.12 @	—

SUBSTITUTES

Black	lb.	.08 @	.15
White	lb.	.09½ @	.16½
Brown	lb.	.10 @	.15
Brown factice	lb.	.09 @	.18
White factice	lb.	.09½ @	.16½

VULCANIZING INGREDIENTS

Black hyposulphite	lb.	.18 @	.20
Ethyl Chloride, Cyl.	lb.	.55 @	—
" " Drums	lb.	.45 @	—
Sulphur Chloride (drums)	lb.	.04½ @	.06
Sulphur flour Commercial bags	cwt.	1.35 @	1.70
" bbls.	cwt.	1.70 @	—
Superfine, bags	cwt.	2.20 @	2.50
" bbls.	cwt.	2.60 @	2.90
100% pure, refined, bags	cwt.	2.35 @	2.65
bbls.	cwt.	2.60 @	2.90

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Vulcanization DU PONT *Accelerators*

TECHNICAL ABSTRACTS

Rapidity of Vulcanization of Plantation Rubber

***Malay Agri. Jor.*, volume 11, page 310**

In the coagulation of rubber latex by the introduction of the same into three times as much ethyl alcohol by volume at a temperature of 60 degrees C, the rapidity of the vulcanization of the crepe rubber obtained in this manner is distinctly greater than if the alcohol used is maintained at a temperature of 25 degrees C. When the moist coagulum obtained with alcohol is allowed to mature, then the rapidity of vulcanization is increased, but when the product is obtained with hot alcohol and is similarly matured, there is no increase in the rapidity of vulcanization.

When alcohol is used which has a p_h concentration of 3, 7, and 9, the increase in the p_h coefficient is accompanied by an increase in the rate of vulcanization for samples that are matured or not. These effects cannot be attributed to the simple chemical action of the alkali or of the acid present, nor to a selective action of the alcohol in relation to certain non-rubber constituents in the rubber under different conditions.

The insoluble nitrogenous matter, which is separated from depolymerized rubber and is then introduced into crepe rubber, is without doubt an accelerator of the vulcanization of the latter. An accelerating agent, which is more efficacious, can be produced by an aerobic decomposition than by an anaerobic decomposition of the natural protein matter in the rubber or of the residual substances obtained from the serum.

The extent to which the vulcanization can be accelerated by the addition of solid matter derived from the serum or from the products of decomposition is limited. The artificial organic accelerators and the products of the decomposition of the proteins are much more powerful accelerators than the products obtained by the decomposition of the serum. The extreme limit of acceleration by natural means is represented by the complete evaporation of the rubber which gives a product that contains all the non-rubber constituents of the latex.

The rapidity of the vulcanization of crude matured rubber is not reduced by washing. The exterior surfaces of a slab of matured rubber vulcanizes much more rapidly than the rubber in the interior of the mass. Extraction of the rubber with cold acetone results in an increase in the speed of vulcanization of ordinary crepe rubber, but this process has no effect on matured rubber obtained from the same coagulum.

The evaporation of non-diluted latex gives a product which has approximately the same rate of vulcanization as rubber in the matured slab. The results in general show that the characteristics of the vulcanization of crude rubber are due only in part to the nitrogenous constituents and that the rapidity of the vulcanization of rubber is strongly influenced by the presence of oxidation products of rubber, which may be formed right at the outset through the effect of the peroxydase in the latex. The labial peroxide of rubber formed in this manner accelerates the vulcanization, but on exposure to air or to oxygen, it is transformed into oxygenated resinous compounds of the known type. The effect of aging, which results at times in an acceleration of vulcanization and at other times in retardation of the process, depends on the formation of two types of oxygenated compounds.

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